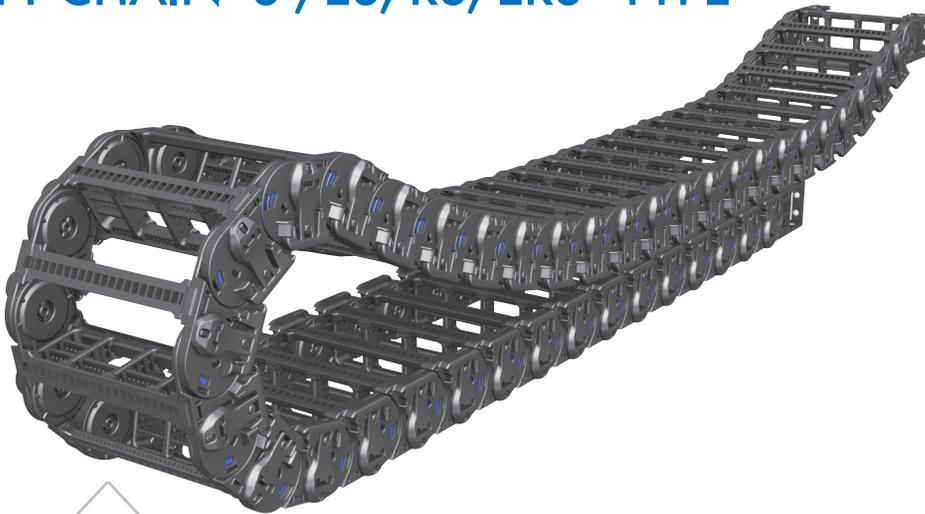


Shift chain[®] SLIDING-S TYPE : Skid

- ST044S - 100p
- ST072S - 105p
- ST095S - 110p
- ST120S - 115p

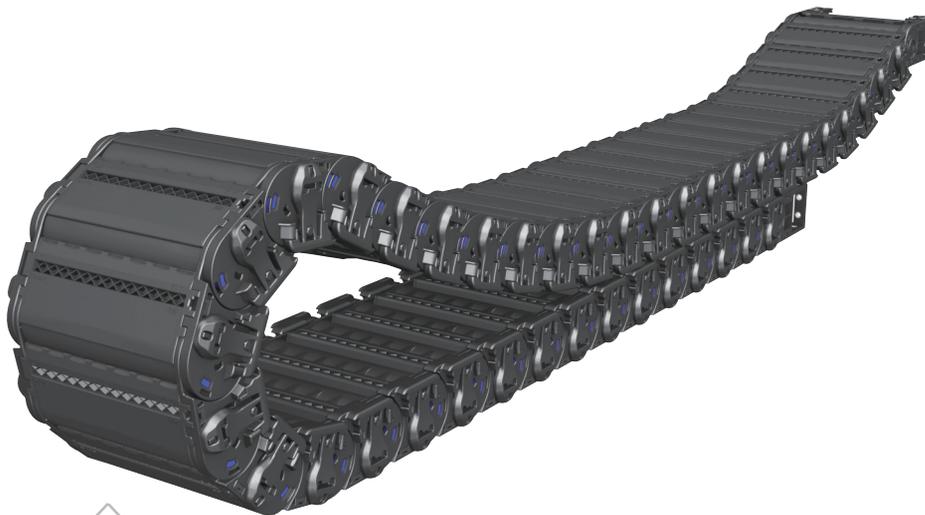


SHIFT CHAIN S , ES, RS, ERS - TYPE



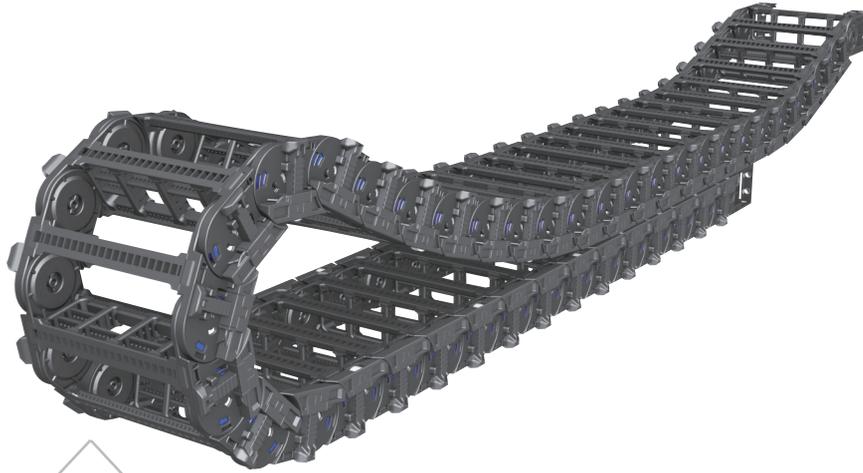
ST - S Type (Skid)

1. To minimize noise and make stable driving of chain, applies a SKID to the friction surface and those are touched each other smoothly.
2. Improved structure of Side Band could make stronger durability and develop most suitable parts to protect cable damage.



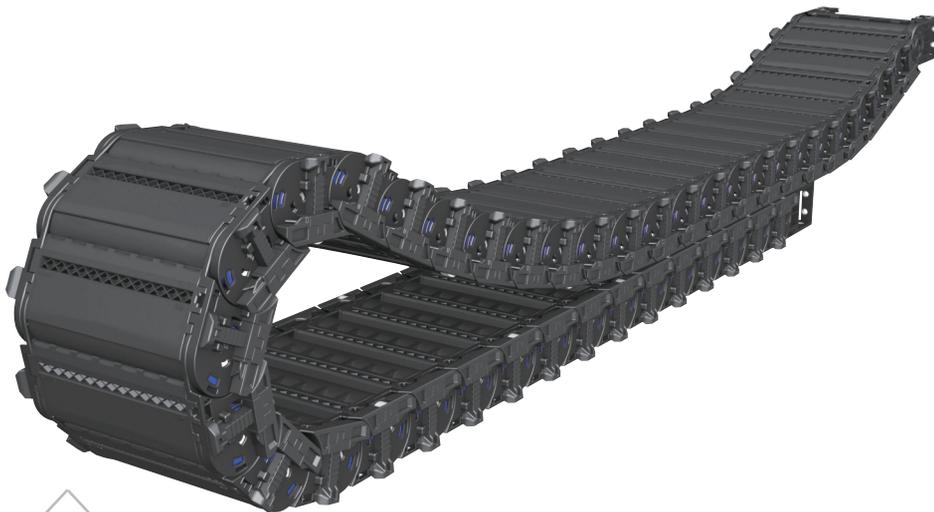
ST - ES Type (Enclosed Skid)

1. To protect cables perfectly from outside substance, enclosed frame is applied to the ST-S Type for long distance application.
2. This chain can be used in workplace with poor surroundings such as dusts, paints and machining chip etc.
(Application: cutting, welding, panting line etc.)



ST - RS Type (Roller Skid)

1. To minimize frictional force resulted in disturbing from a SKID, applies a Roller to the friction surface and those are touched each other smoothly. * The coefficient of friction : 0.02~0.07u (Normal Cable chain:0.3~0.04u)
2. It is suitable for the long distance equipment with heavy weight of cable. (more then 50m)

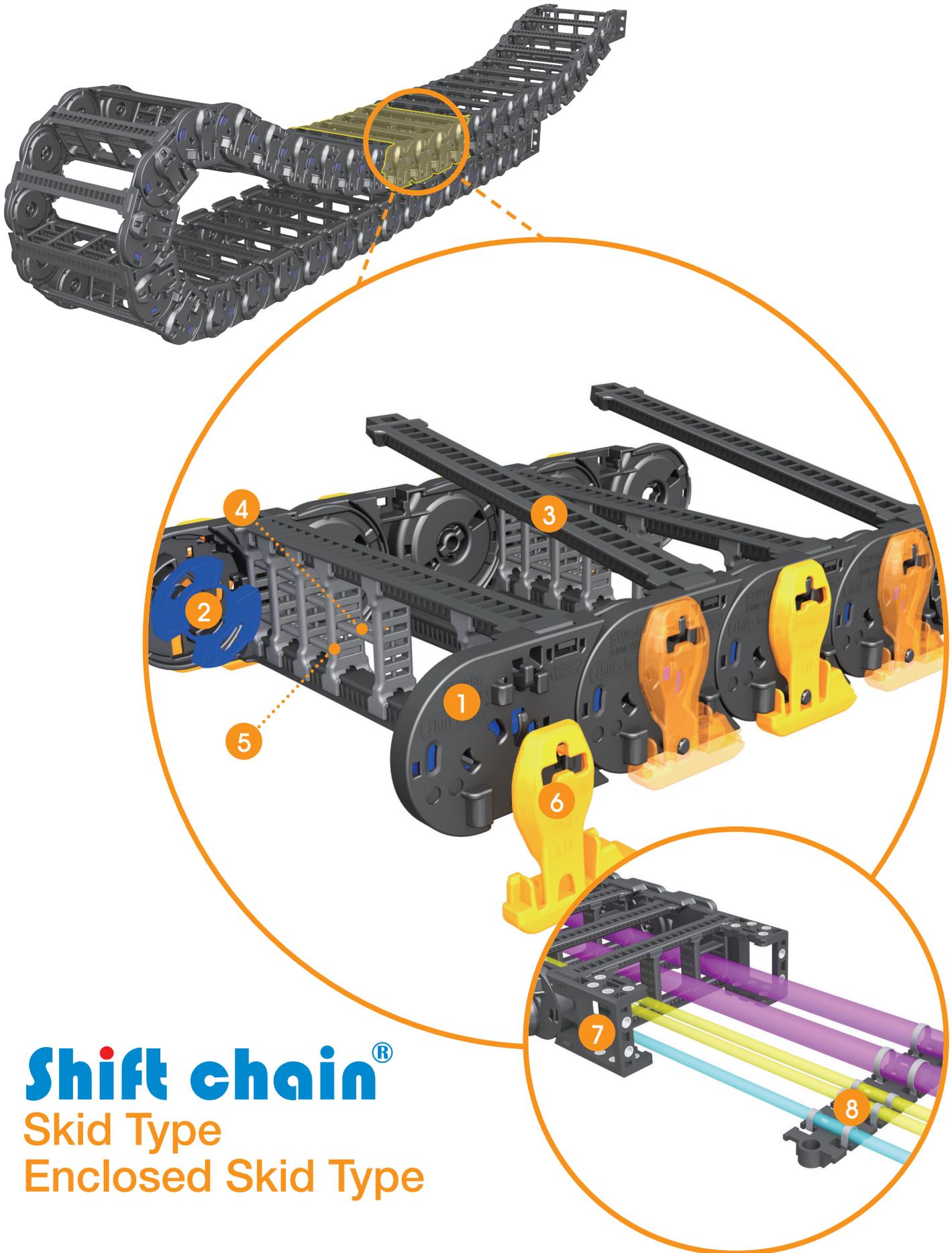


ST - ERS Type (Enclosed Roller Skid)

1. As applying the enclosed frame to ST-RS Type, the cable can be also protected from the any substance perfectly same as ST-RS Type, furthermore, it can be used in more wider place.
2. It is suitable for the long distance equipment with heavy weight of cable. (more then 50m)
3. This chain can be used in workplace with poor surroundings such as dusts, paints and machining chip etc. (cutting, welding, panting etc.)



ARTICLE NAME & DETAILS OF SHIFT CHAIN S , ES - TYPE



Shift chain®
 Skid Type
 Enclosed Skid Type



1 Side Band(SB)

R-Setting inserted band serial coupling type' that strengthen binding since the supporting point of side band is designed as 6 separated points.

2 Bending Radius Unit(BR)

Shift Chain has the unique structure that the value of Bending Radius is decided by Bending Radius unit .

3 Frame (FR)

[FRU (D) 밀폐형적용가능]

Frame is performed as a supporter of right and left side bands and it is designed with teeth to prevent divider from detaching.

4 Separator(SP)

Dividing the inserted cables vertically to prevent twisting of cables and damage of sheath. Can be cut by 5mm for the convenience. When combining with divider, using separator pin it can be fixed hard not to move.

5 Divider (DV-S, M, R, T)

Divided the inside of chain vertically to prevent cable from twisting and sheath damage caused by friction. There are S, M, R and T type.

6 Skid

To minimized inference above and under chain during moving, friction side of skid was chamfered and developed to protect against damage from interference.

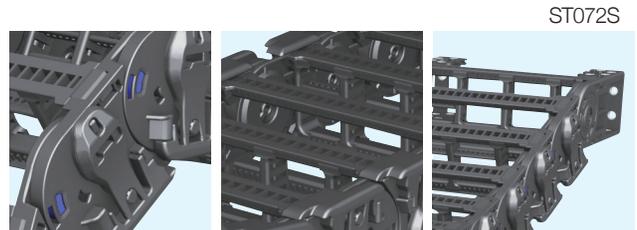
7 Free End Bracket (FEB)

Free End Bracket is very effective in a way that it can be mounted up, down and front. It can be fixed stronger by steel washer.

Shift Chain can be fixed with the diverse ways because FEB can be moved more than 45 degrees.

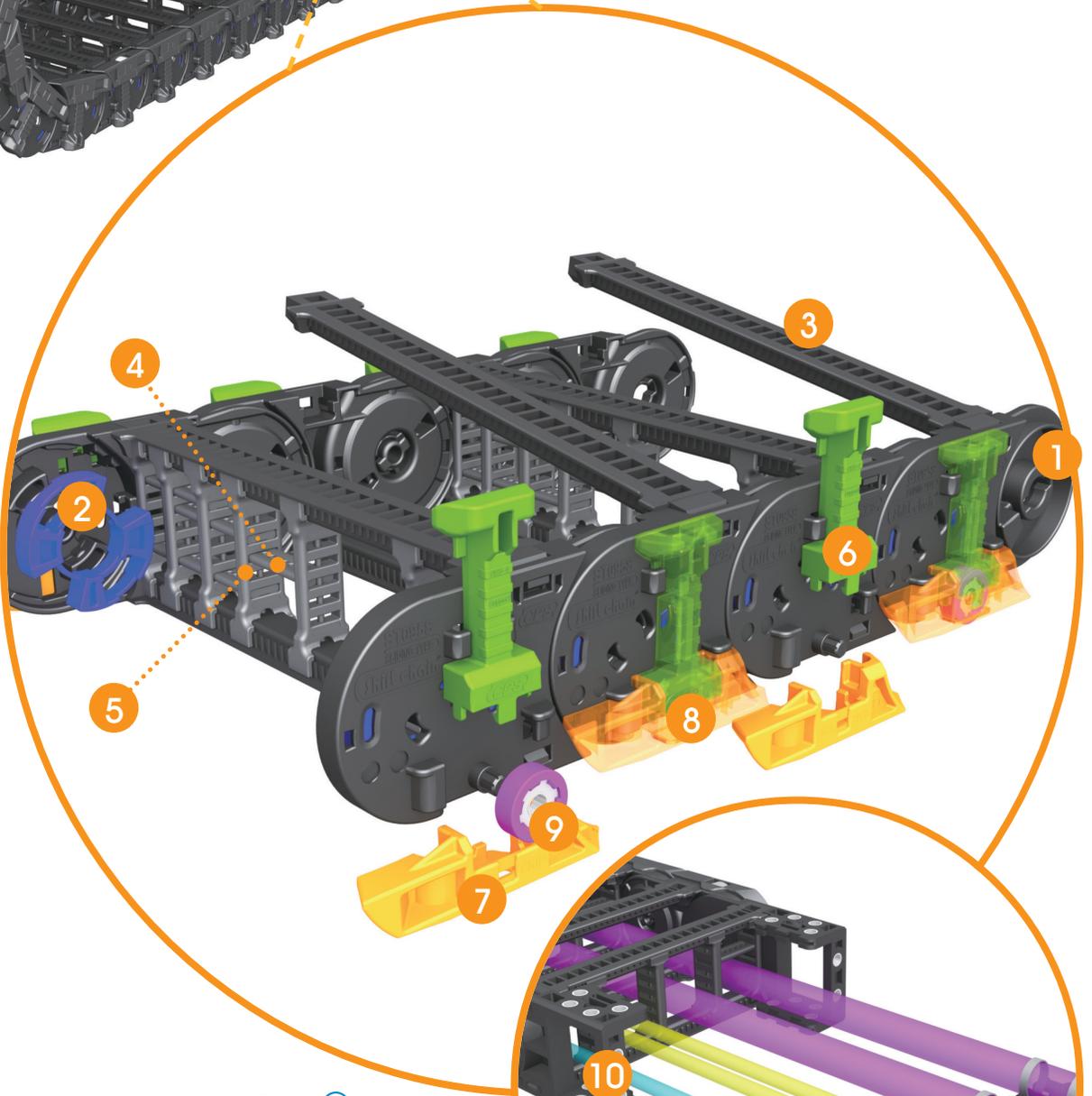
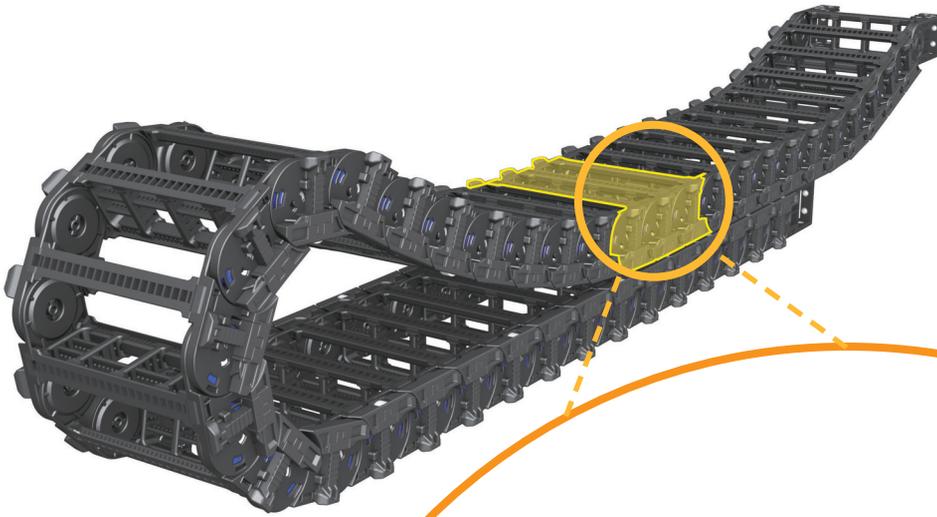
8 Tie Wrap(TW)

Tie Wrap fixes the cable in one straight line and prevent the cable from twisting and entangling during operation. There are two types available depending on the application : attached to bracket and separated from bracket.





ARTICLE NAME & DETAILS OF SHIFT CHAIN RS, ERS - TYPE



Shift chain®
Roller Skid Type
Enclosed Roller Skid Type



1 Side Band(SB)

R-Setting inserted band serial coupling type' that strengthen binding since the supporting point of side band is designed as 6 separated points.

2 Bending Radius Unit(BR)

Shift Chain has the unique structure that the value of Bending Radius is decided by Bending Radius unit .

3 Frame (FR)

[FRU (D) 밀폐형적용가능]

Frame is performed as a supporter of right and left side bands and it is designed with teeth to prevent divider from detaching.

4 Separator(SP)

Dividing the inserted cables vertically to prevent twisting of cables and damage of sheath. Can be cut by 5mm for the convenience. When combining with divider, using separator pin it can be fixed hard not to move.

5 Divider (DV-S, M, R, T)

Divided the inside of chain vertically to prevent cable from twisting and sheath damage caused by friction. There are S, M, R and T type.

6 Support

It is performed as a supporter of Skid and Roller Skid. It makes Skid and Roller Skid move up and down.

7 8 Roller Skid, Skid

It is divided into Roller mounted Skid and Roller unmounted Skid. Roller can be protruded or hidden according to position of chain.

9 Roller

Roller which is assembled with specific bearing minimize friction for long-distance travel.

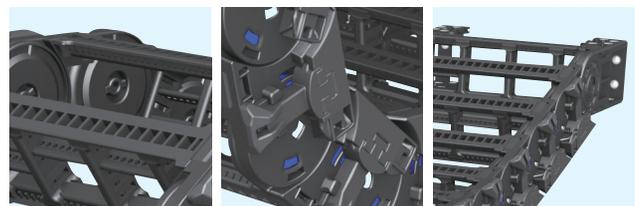
10 Free End Bracket (FEB)

Free End Bracket is very effective in a way that it can be mounted up, down and front. It can be fixed stronger by steel washer. Shift Chain can be fixed with the diverse ways because FEB can be moved more than 45 degrees.

11 Tie Wrap(TW)

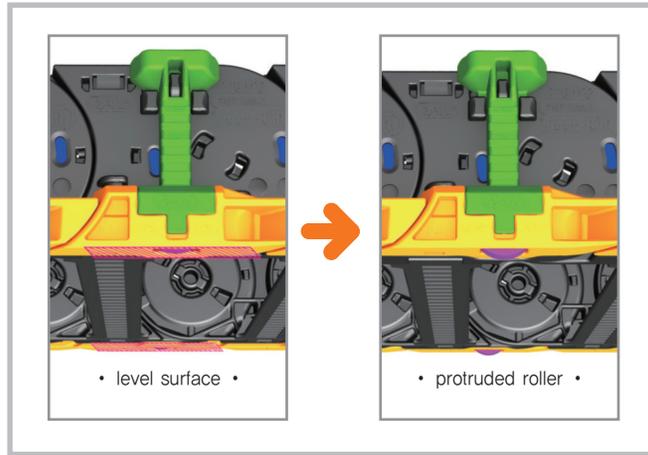
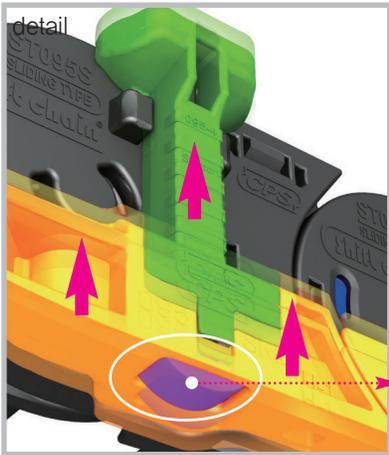
Tie Wrap fixes the cable in one straight line and prevent the cable from twisting and entangling during operation. There are two types available depending on the application : attached to bracket and separated from bracket.

ST072RS

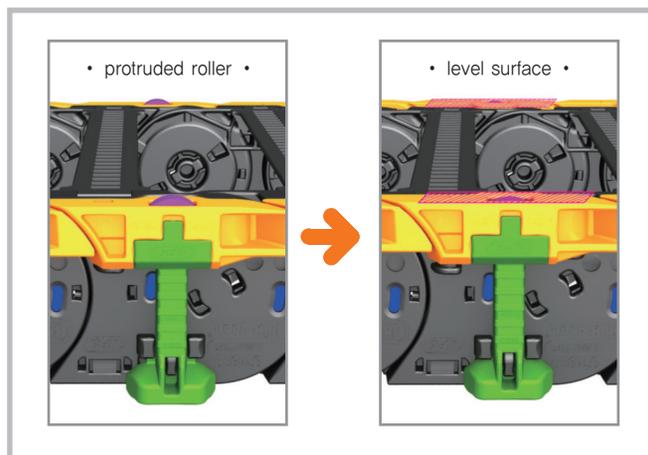
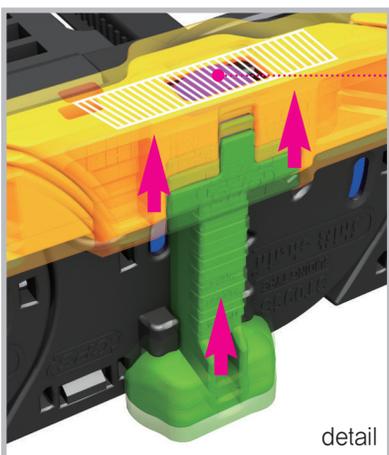
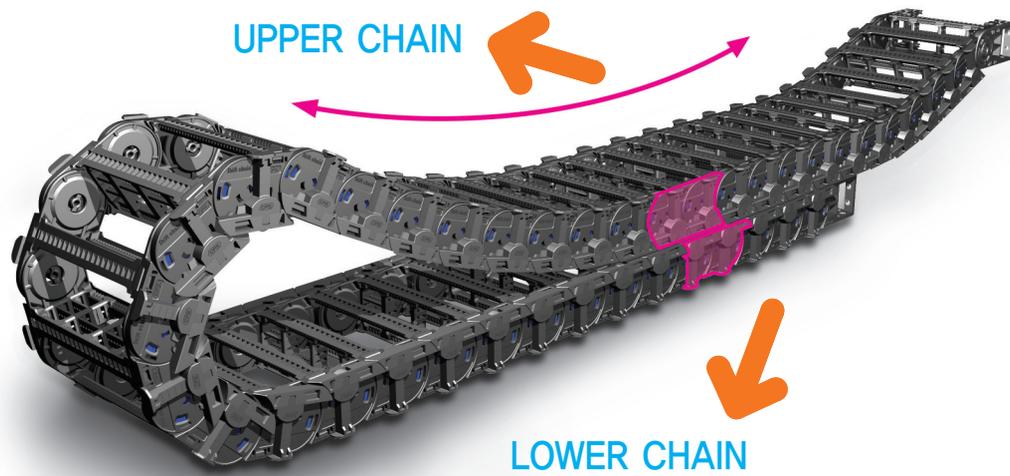




1 Roller Skid Performance Property



Principle of skid motion : The protruded Roller is performed as a wheel when Roller mounted skid is touched on lower chain. This principle makes it possible to move fast in long-distance travel without friction.

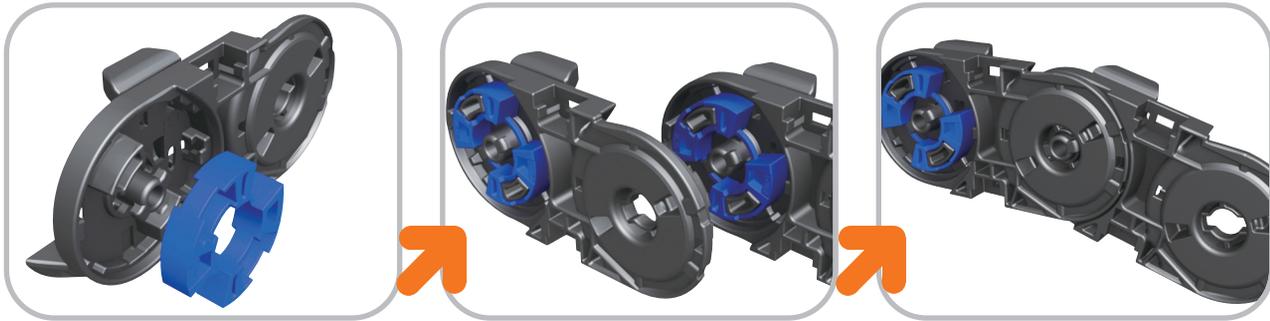


The support lifts Skid(Roller-Skid, Skid) and makes the surface level, when the cable Chain which includes cables is contacted on the surface of bottom of guide channel.



2 The Feature of Setting-up Unit for Bending Radius!

Unlike the existing chains, the Shift Chain is designed to use only one side band for the same model and to insert respective Bending Radius unit to make bending radius each. Like the below pictures, the value of bending radius is changeable just by inserting individual bending unit, and unlike the existing chains, it is suggested that you don't need side bands for each bending radius in stock, but need BR unit for each bending radius, so the Shift Chain has an excellent competitiveness to create the maximum synergy effect in relation to easy maintenance, efficient stock management and cost reduction.



The Bending Radius combined by the Bending Radius unit(BR).

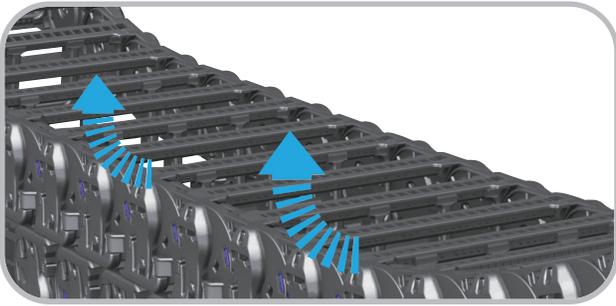
3 The Bending Radius combined by the Bending Radius unit(BR)

When combining Side Band with the different Bending Radius unit, the bending radius of cable chain is formed like the below and also the 'R' of cable chain will be decided by the Bending Radius-setting unit. Bending Radius(R) of each cable chains is written with each value of "R" in details of each cable chain .

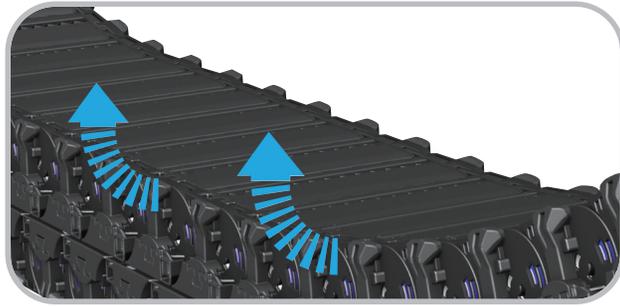




4 More convenient frame structure - Hinge Frame Type!



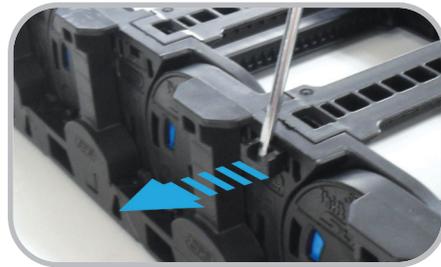
ST072RS, ST095RS, ST120RS, ST150RS, ST S-Type



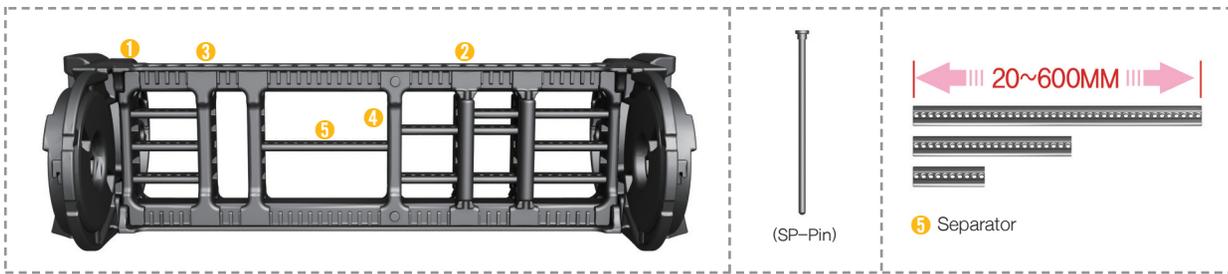
ST072, 095, 120, ST150ES / ST 072, 095, 120, 150ERS

The Hinge type frame is created by using the original frame but locking it into place with a ball hinge on one side and making the cables easily accessible by opening the other. The hinge frame can open to expose the inserted cables on both the topside and underside of the carrier.

For Shift Chain(ST) 072S, 095S, 120S, 150S, 072SE, 095SE, 120SE, 150SE Type one side of the frame is fixed by inserting a fixing pin to prevent frame open, which caused by any external impact.



5 Diversity & Functionality Combine in this New Separator and Divider Creation!



It can protect inner cable more efficiently and safely with the diverse combination of Divider and Separator. Divider consists of S-Type for exclusive use of side, R-Type for roller mounted, M-Type for pin jointed and T-type for reinforcement.



1 DV-S Type



2 DV-R Type



3 DV-M Type

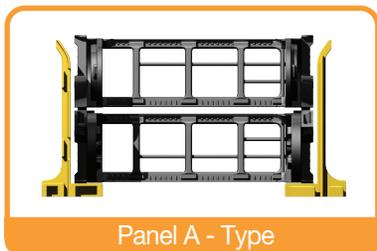
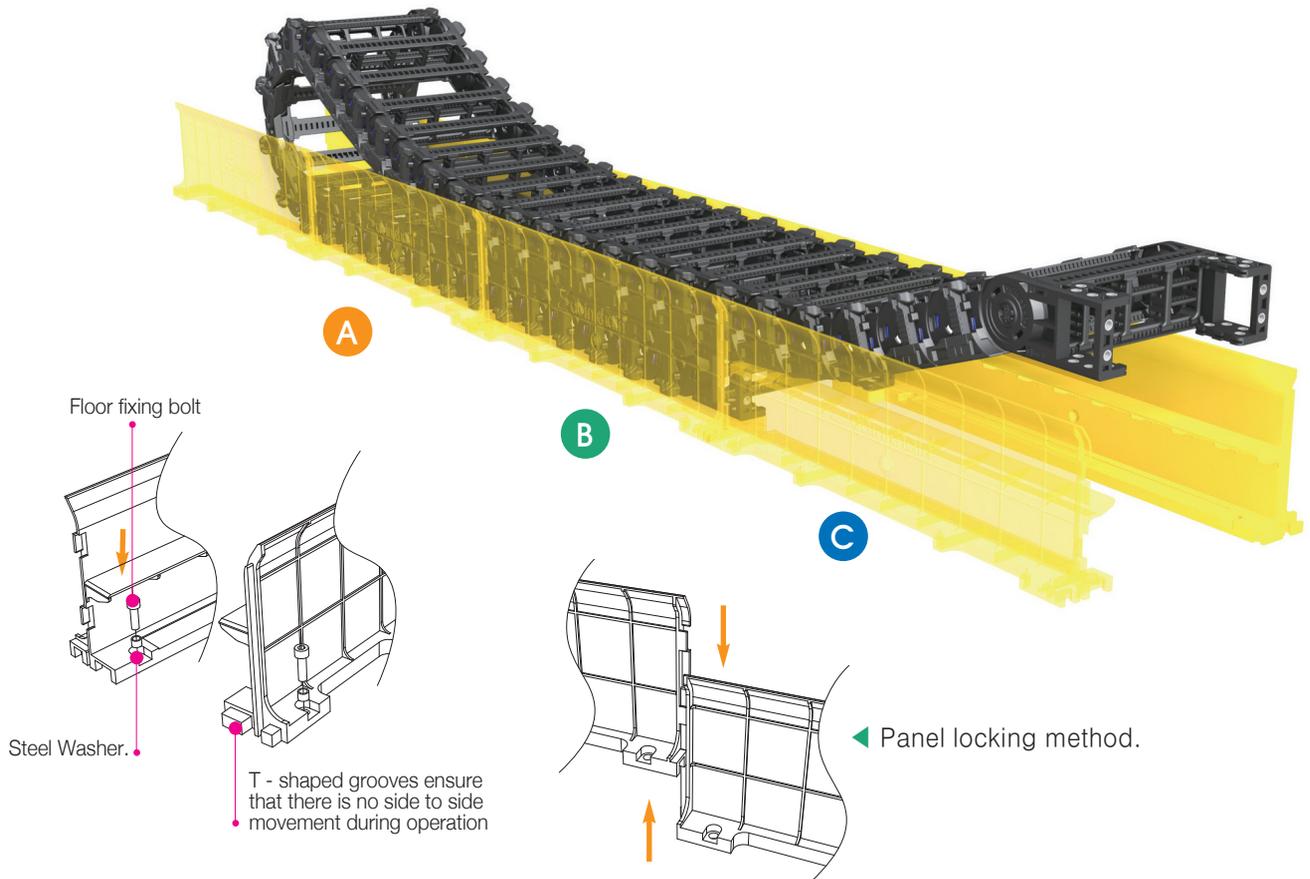


4 DV-T Type

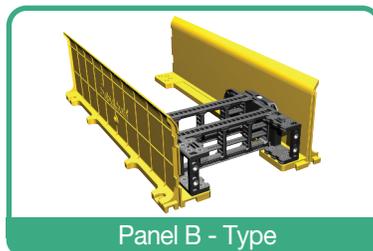
M-Type is designed to fix separator strongly by using separator pin and prevents cable from twisting and sheath damage. T-Type is connected to upper and lower frame and prevent frame from drooping when the inserted cables are heavy. The length of separator can be installed from 20mm to 600mm and be cut by 5mm.



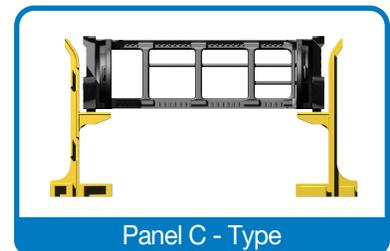
6 Develop Innovative System Guide Channel Firstly In The World!



- This panel is installed down the front end of the stroke where the Shift Chain is riding on itself.



- This panel is for securing the Shift Chain bracket to the channel in the mounting positions.



- This panel is for installation on the back end of the stroke, past the center of the travel length to provide support to the topside links.

System Guide Channel

- The new System Guide Channel keeps your Shift Chain on course for long stroke applications where balance is the key.
- The System Guide Channel compared to the current steel guide channel is lighter, easier to assemble, disassemble and it is easier and safer to install as well.
- In lengths of 500mm, the System Guide Channel comes in three different types and CPS-Amide combined with GF material help to make the guide channel strong and sturdy. For most applications, your steel guide channel can be switched out quite easily to the new System Guide Channel.
- Due to the UV (Ultraviolet) and ESD (Electro-Static Discharge) protection, you can apply the same safety options to your System Guide Channel as the ones you already have on your Sabin Chain Series.



KINDS AND DIMENSIONS

ST - S : Skid Type

Shift Chain S-Type	Pitch	Bending Radius R 	Weight kg/m	Speed m/sec	Temperature °C	Clearance 				Frame style	Divider possible with frame
						A	B	C	D		
ST044S.035	44	70,90,120,150	-	10	-30 ~ +130	74	38.5	35	26		
ST044S.050	44					89	38.5	50	26		
ST044S.055	44					94	38.5	55	26		
ST044S.075	44					114	38.5	75	26		
ST044S.100	44					139	38.5	100	26		
ST044S.125	44					164	38.5	125	26		
ST044S.150	44					189	38.5	150	26		
ST044S.175	44					214	38.5	175	26		
ST044S.200	44					239	38.5	200	26		
ST072S.050	72					100, 120, 145, 200, 250, 300	2.48	10	-30 ~ +130		
ST072S.075	72	130	71.8	75	45						
ST072S.100	72	155	71.8	100	45						
ST072S.125	72	180	71.8	125	45						
ST072S.150	72	205	71.8	150	45						
ST072S.175	72	230	71.8	175	45						
ST072S.200	72	255	71.8	200	45						
ST072S.250	72	305	71.8	250	45						
ST072S.300	72	355	71.8	300	45						
ST095S.075	95	135, 150, 200, 230, 280, 400	3.44	10	-30 ~ +130		137			89	75
ST095S.100	95		162			89	100	56			
ST095S.125	95		187			89	125	56			
ST095S.150	95		212			89	150	56			
ST095S.175	95		237			89	175	56			
ST095S.200	95		262			89	200	56			
ST095S.250	95		312			89	250	56			
ST095S.300	95		362			89	300	56			
ST095S.350	95		412			89	350	56			
ST095S.400	95		462			89	400	56			
ST120S.075	120	180, 200, 250, 300, 350, 400, 500	4.71	10	-30 ~ +130	143	115	75	78		
ST120S.100	120		168			115	100	78			
ST120S.125	120		193			115	125	78			
ST120S.150	120		218			115	150	78			
ST120S.175	120		243			115	175	78			
ST120S.200	120		268			115	200	78			
ST120S.250	120		318			115	250	78			
ST120S.300	120		368			115	300	78			
ST120S.350	120		418			115	350	78			
ST120S.400	120		468			115	400	78			
ST120S.450	120		7.38			518	115	450	78		
ST120S.500	120		568			115	500	78			
ST120S.550	120		618			115	550	78			
ST120S.600	120		668			115	600	78			

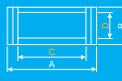
ST - ES : Enclosed Skid Type

Shift Chain ES-Type	Pitch	Bending Radius R 	Weight kg/m	Speed m/sec	Temperature °C	Clearance 				Frame style	Divider possible with frame
						A	B	C	D		
ST044ES.035	44	70,90,120,150	-	10	-30 ~ +130	74	38.5	35	26		
ST044ES.050	44					89	38.5	50	26		
ST044ES.055	44					94	38.5	55	26		
ST044ES.075	44					114	38.5	75	26		
ST044ES.100	44					139	38.5	100	26		
ST044ES.125	44					164	38.5	125	26		
ST044ES.150	44					189	38.5	150	26		
ST044ES.175	44					214	38.5	175	26		
ST044ES.200	44					239	38.5	200	26		
ST072ES.050	72					120,145, 200,250,300	2.77	10	-30 ~ +130		
ST072ES.075	72	130	71.8	75	44						
ST072ES.100	72	155	71.8	100	44						
ST072ES.125	72	180	71.8	125	44						
ST072ES.150	72	205	71.8	150	44						
ST095ES.100	95	150,200, 230,280,400	4.16	10	-30 ~ +130	162	89	100	55		
ST095ES.125	95		187			89	125	55			
ST095ES.150	95		212			89	150	55			
ST095ES.175	95		237			89	175	55			
ST095ES.200	95		262			89	200	55			
ST120ES.150	120	200, 250, 300, 350, 400, 500	6.28	10	-30 ~ +130	218	115	150	76		
ST120ES.150	120		268			115	200	76			
ST120ES.150	120		318			115	250	76			
ST120ES.150	120		368			115	300	76			



KINDS AND DIMENSIONS

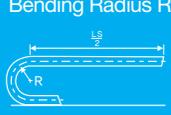
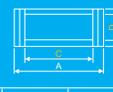
ST - RS : Roller Skid Type

Shift Chain RS -Type	Pitch	Bending Radius R 	Weight kg/m	Speed m/sec	Temperature ° C	Clearance 				Frame style	Divider possible with frame
						A	B	C	D		
ST044RS.035	44	70, 90, 120, 150	1.09	10	-30 ~ +130	73	40.5	35	26		
ST044RS.050	44		1.15			88	40.5	50	26		
ST044RS.055	44		1.17			93	40.5	55	26		
ST044RS.075	44		1.24			113	40.5	75	26		
ST044RS.100	44		1.33			138	40.5	100	26		
ST044RS.125	44		1.47			163	40.5	125	26		
ST044RS.150	44		1.59			188	40.5	150	26		
ST044RS.175	44		1.88			213	40.5	175	26		
ST044RS.200	44		2.05			238	40.5	200	26		
ST072RS.050	72	100, 120, 145, 200, 250, 300	2.59	10	-30 ~ +130	104	69	50	45		
ST072RS.075	72		2.67			129	69	75	45		
ST072RS.100	72		2.77			154	69	100	45		
ST072RS.125	72		2.91			179	69	125	45		
ST072RS.150	72		3.05			204	69	150	45		
ST072RS.175	72		3.17			229	69	175	45		
ST072RS.200	72		3.59			254	69	200	45		
ST072RS.250	72		3.99			304	69	250	45		
ST072RS.300	72		4.34			354	69	300	45		
ST095RS.075	95	135, 150, 200, 230, 280, 400	3.48	10	-30 ~ +130	143	90	75	56		
ST095RS.100	95		3.55			168	90	100	56		
ST095RS.125	95		3.73			193	90	125	56		
ST095RS.150	95		3.84			218	90	150	56		
ST095RS.175	95		3.96			243	90	175	56		
ST095RS.200	95		4.14			268	90	200	56		
ST095RS.250	95		4.41			318	90	250	56		
ST095RS.300	95		4.67			368	90	300	56		
ST095RS.350	95		5.03			418	90	350	56		
ST095RS.400	95	5.43	468	90	400	56					
ST120RS.075	120	180, 200, 250, 300, 350, 400, 500	4.75	10	-30 ~ +130	143	117	75	78		
ST120RS.100	120		4.87			168	117	100	78		
ST120RS.125	120		5.02			193	117	125	78		
ST120RS.150	120		5.10			218	117	150	78		
ST120RS.175	120		5.28			243	117	175	78		
ST120RS.200	120		5.52			268	117	200	78		
ST120RS.250	120		5.82			318	117	250	78		
ST120RS.300	120		6.25			368	117	300	78		
ST120RS.350	120		6.67			418	117	350	78		
ST120RS.400	120	6.96	468	117	400	78					
ST120RS.450	120	180, 200, 250, 300, 350, 400, 500	7.42	10	-30 ~ +130	518	117	450	78		
ST120RS.500	120		7.65			568	117	500	78		
ST120RS.550	120		8.49			618	117	550	78		
ST120RS.600	120		8.66			668	117	600	78		
ST150RS.75	150	305, 405, 505, 605	7.86	10	-30 ~ +130	162	145	75	110		
ST150RS.100	150		7.97			187	145	100	110		
ST150RS.125	150		8.10			212	145	125	110		
ST150RS.150	150		8.17			237	145	150	110		
ST150RS.175	150		8.33			262	145	175	110		
ST150RS.200	150		8.54			287	145	200	110		
ST150RS.250	150		8.80			337	145	250	110		
ST150RS.300	150		9.18			387	145	300	110		
ST150RS.350	150		9.55			437	145	350	110		
ST150RS.400	150	9.90	487	145	400	110					
ST150RS.450	150	305, 405, 505, 605	10.20	10	-30 ~ +130	537	145	450	110		
ST150RS.500	150		10.40			587	145	500	110		
ST150RS.550	150		11.14			637	145	550	110		
ST150RS.600	150		11.28			687	145	600	110		



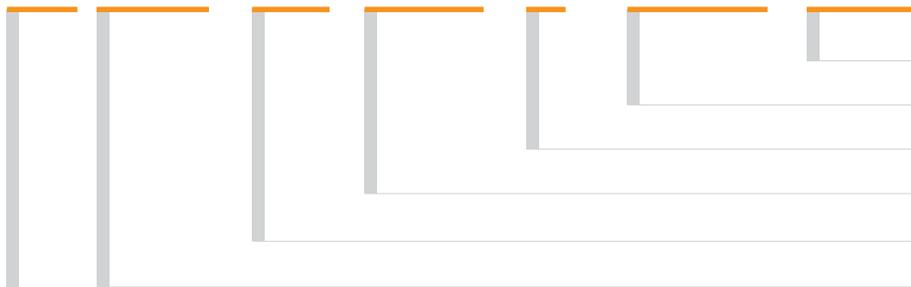
KINDS AND DIMENSIONS

ST - ERS : Enclosed Roller Skid Type

Shift Chain ERS -Type	Pitch	Bending Radius R 	Weight kg/m	Speed m/sec	Temperature °C	Clearance 				Frame style	Divider possible with frame
						A	B	C	D		
ST044ERS.035	44	70, 90, 120, 150	1.07	10	-30 ~ +130	73	40.5	35	24.5		
ST044ERS.055	44		93			40.5	55	24.5			
ST044ERS.075	44		113			40.5	75	24.5			
ST044ERS.100	44		138			40.5	100	24.5			
ST072ERS.050	72	120, 145, 200, 250, 300	2.53	10	-30 ~ +130	104	69	50	44		
ST072ERS.075	72		129			69	75	44			
ST072ERS.100	72		154			69	100	44			
ST072ERS.125	72		179			69	125	44			
ST072ERS.150	72		204			69	150	44			
ST095ERS.100	95	150, 200, 230, 280, 400	4.20	10	-30 ~ +130	168	85	100	55		
ST095ERS.125	95		193			85	125	55			
ST095ERS.150	95		218			85	150	55			
ST095ERS.175	95		243			85	175	55			
ST095ERS.200	95		268			85	200	55			
ST120ERS.150	120	200, 250, 300, 350, 400, 500	5.17	10	-30 ~ +130	218	112	150	76		
ST120ERS.200	120		268			112	200	76			
ST120ERS.250	120		318			112	250	76			
ST120ERS.300	120		368			112	300	76			
ST150ERS.200	150	305, 405, 505, 605	-	10	-30 ~ +130	287	145	200	110		
ST150ERS.250	150		337			145	250	110			
ST150ERS.300	150		387			145	300	110			
ST150ERS.350	150		437			145	350	110			
ST150ERS.400	150		487			145	400	110			

ORDERING

ST 044E. 100. R120 / F - 1500L : 10ST



Q'ty(set)

Length(mm)

Free End Bracket

Bending Radius

Inside Width

N : Normal Type

E : Enclose Type

Sliding Type

S / ES / RS / ERS

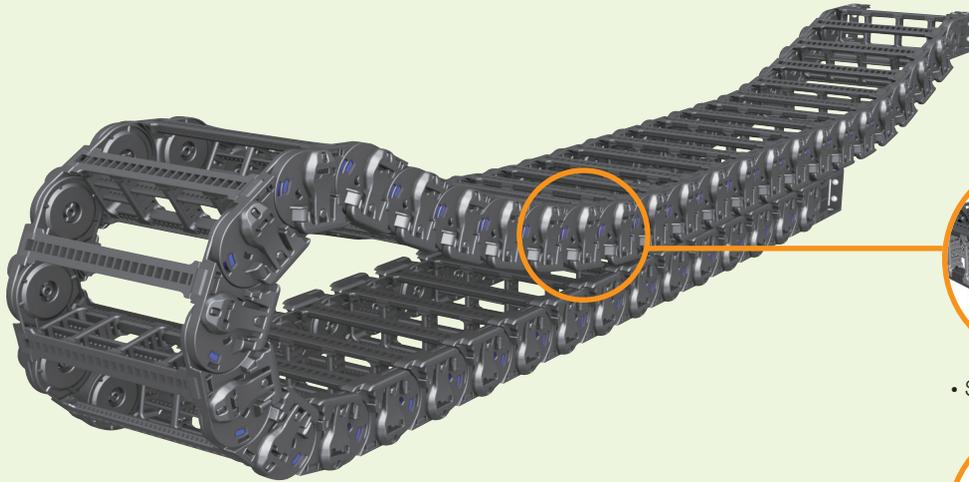
S : Skid Type ES: Enclosed Skid Type RS : Roller Skid Type ERS : Enclosed Roller Skid Type

Shift Chain



Min ●●●●●●● Max

Shift chain® ST 044S Skid Type



• Shift chain S-Type •



• Bending Radius Unit •

MATERIAL

- **Chain material:**
CPS-amide with glass fiber reinforced UL94-HB
- **Low Noise & Low Mote**
- **Temperature :** -30°C ~ +130°C
- **Coefficient of Friction :**
0.3 ~ 0.4 μ

Applications

- Facilities and equipments requiring a long travel distance as below; Gantry Robots, Robot Carriages, Automatic Welding Lines, Gantry Cranes, Gantry loder, etc.
Gantry robots, Robot carriages, Automatic welding Gantry crane, Gantry loader 등

Calculation of the chain length

$$\left[L = \frac{Ls}{2} + Lp \right]$$

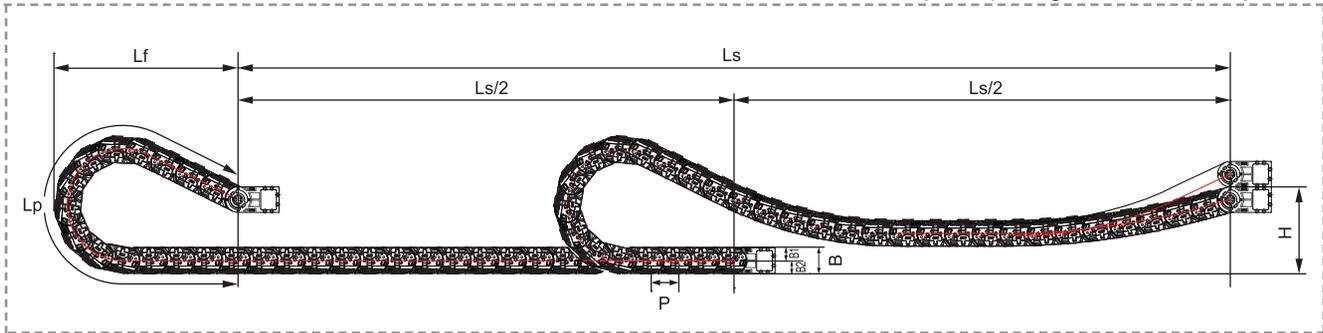
After using skid for a long time, it can be replaced without extra components.



Skid Type **ST 044S**

LAYOUT OF THE CHAIN

Ls: Stroke **Lp:** Loop Length **Lf:** Loop Projection



(Dimensions in mm)

Bending radius R	70	90	120	150
Lp	544	662	926	1,190
L f	249	289	393	497
H	130	130	130	130

ST 044S Type

Pitch P: 44mm
Height B: 38.5mm
B1: 19.5mm
B2: 19mm

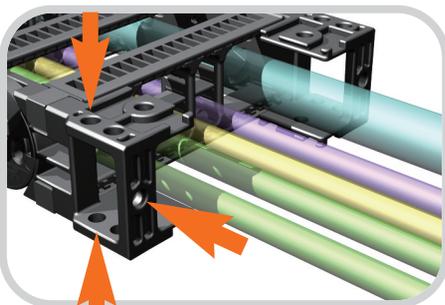
ORDERING

ST 044S. 100. R120 / F - 1500L : 10ST



Q'ty(set)
 Length(mm)
 Free End Bracket
 Bending Radius
 Inside Width
 Skid Type
Shift Chain

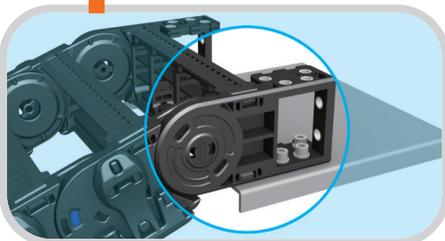
BRACKET TYPE



FEB (Free End Bracket)

FEB Fixes the cable chain to the machinery or moving application. CPS has improved mounting efficiency by unifying the existing Easy End Bracket and Normal End Bracket. The End Bracket is designed to move up and down as the cable chain or application requires.

► BR should not be inserted in the joint of side band and Free End Bracket.



► Above products are patent registered item which can be protected by industrial property right.



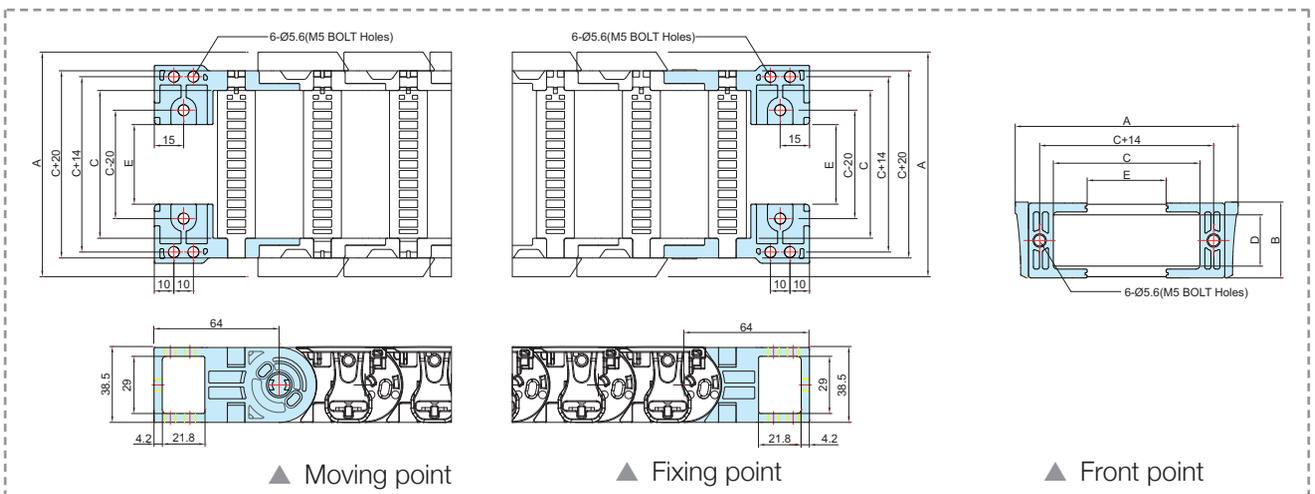
Skid Type **ST 044S**

CHAIN CROSS SECTION



Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
ST 044S.035	74		35			
ST 044S.050	89		50			
ST 044S.055	94		55			
ST 044S.075	114		75			
ST 044S.100	139	38.5	100	26	70, 90, 120, 150	-
ST 044S.125	164		125			
ST 044S.150	189		150			
ST 044S.175	214		175			
ST 044S.200	239		200			

FREE END BRACKET



Chain Type	A	B	C	D	E	Hole Type
ST 044S.035	74		35		0.4	M5 Bolt Holes
ST 044S.050	89		50		15.4	
ST 044S.055	94		55		20.4	
ST 044S.075	114		75		40.4	
ST 044S.100	139	38.5	100	26	65.4	
ST 044S.125	164		125		90.4	
ST 044S.150	189		150		115.4	
ST 044S.175	214		175		140.4	
ST 044S.200	239		200		165.4	

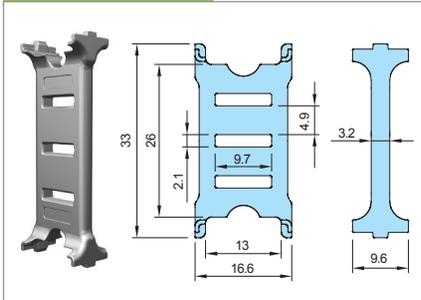


Skid Type **ST 044S**

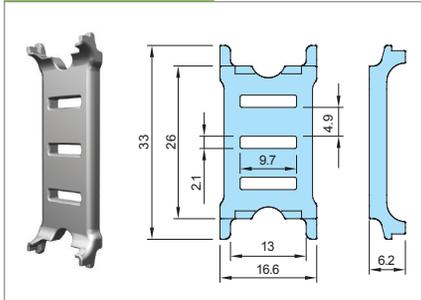
DIVIDERS & SEPARATORS

Dividers (Vertical) and Separators (Horizontal) divide the inner chamber of the cable chain to give each cable diameter its own center and keep the cables separated from each other. The use of a separator in some cases, can also reduce the width requirements as two or more levels can be made within the same chamber. To prevent twisting or damage to the cables, as a rule, there needs to be at least 10% space between the inserted cable and its enclosure.

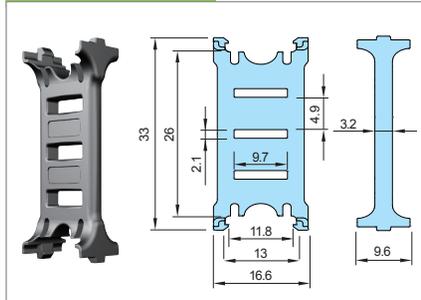
ST 044S DV-M



ST 044S DV-S



ST 044S DV-T



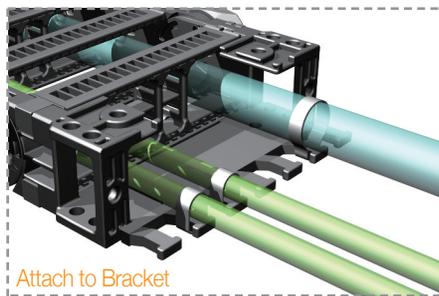
▶ Assemble divider every Two links.

▶ DV/T : Frame 125~200

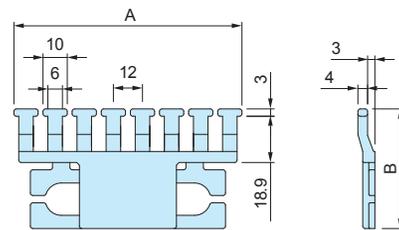
ST044S Separators (SP) (No. : S-SP/M)

Chain Type	Separators	SP035	SP050	SP055	SP075	SP100	SP125	SP150	SP175	SP200
ST 044S		○	○	○	○	○	○	○	○	○

TIE WRAP



Attach to Bracket



(Dimensions in mm)

Tie Wrap	035	050	055	075	100	125
A	46	69.4	70	94	118	142
B	35.4	48.9	48.9	48.9	48.9	48.9

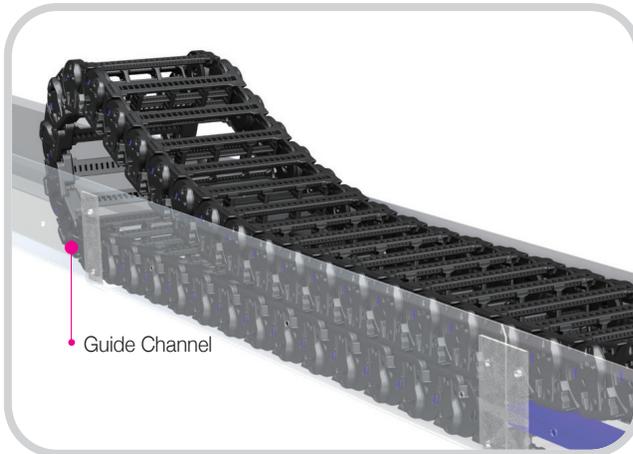
The Tie Wrap separated from the Shift Chain bracket, when installed properly, protects the inserted cables from becoming entangled and twisted during operation.

There are two types in the tie wrap; Attached & Unattached to the bracket.



Skid Type **ST 044S**

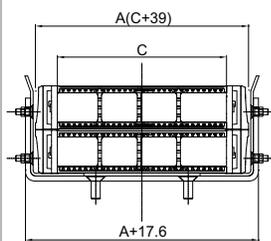
GUIDE CHANNEL



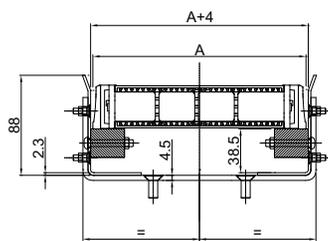
For long stroke applications the guide channel is applied to ensure that the Shift Chain Sliding Chain stays on track and to ensure safety during operation. With the application of a rubber pad on the channel floor, noise is reduced to a minimum. Guide Channels are made of Steel + Zn and can be customized with SUS material .

► Thickness can be changed by the product standards of material.

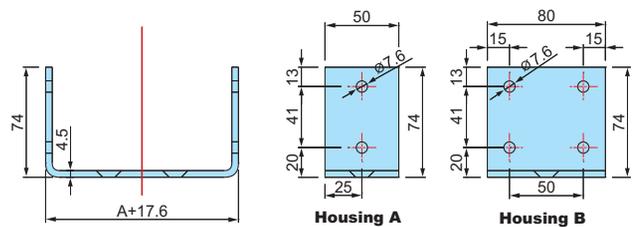
ST 044S Type



▲ A- zone

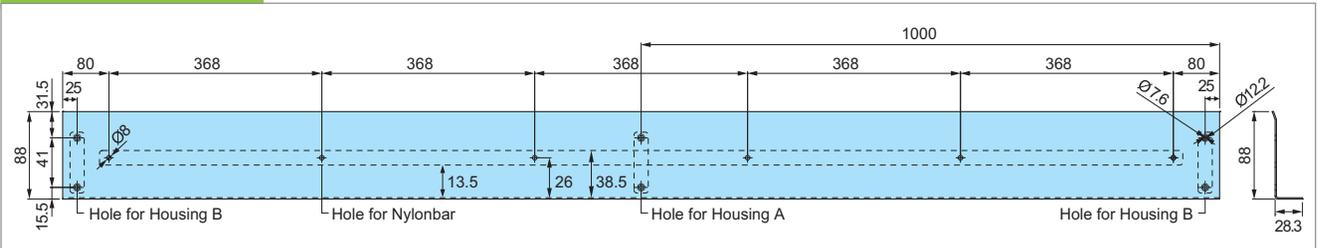


▲ C- zone



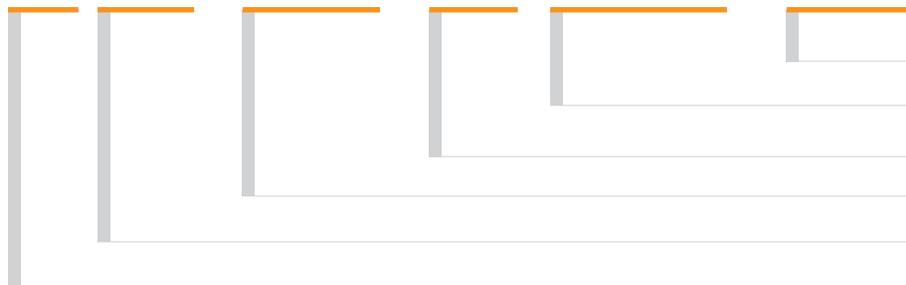
▲ Housing (U-shape)-ST 044S

ST 044S Side Panel



ORDERING

ST-GCS 044S. 100 / A, B, C : 200M

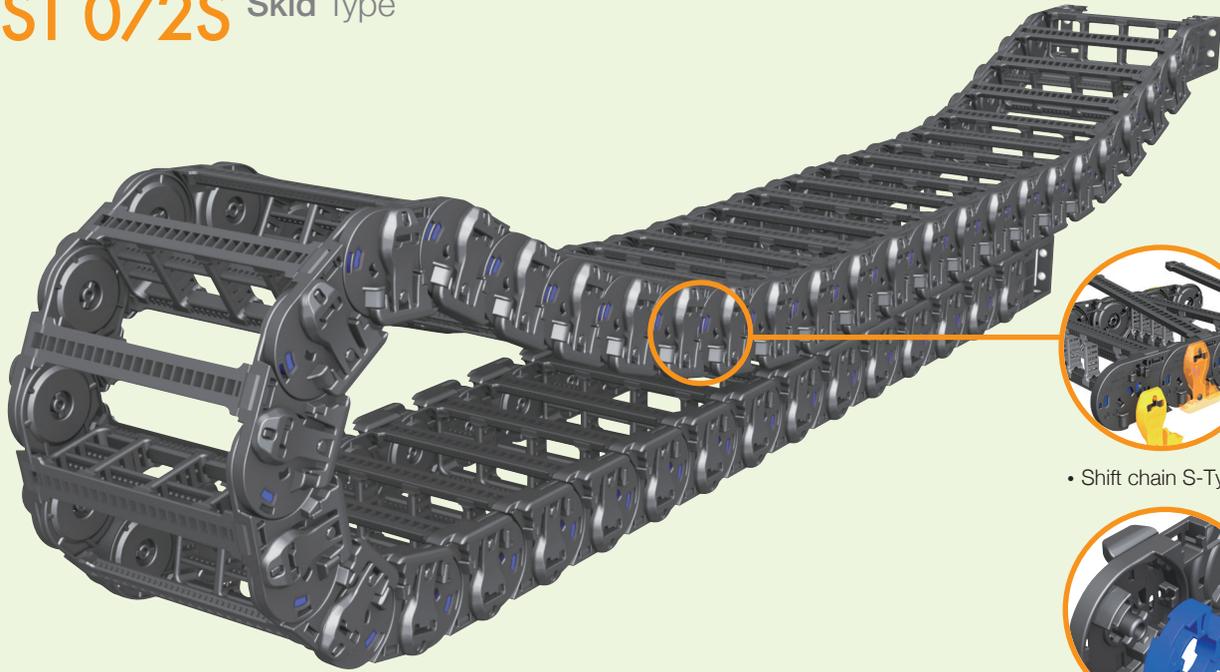


Length(mm)
 Panel A, B, C-Zone
 Inside Width
 Chain Type
 Steel Guide Channel
Shift Chain



Min ●●●●●● Max

Shift chain® ST 072S Skid Type



• Shift chain S-Type •



• Bending Radius Unit •

MATERIAL

- **Chain material:**
CPS-amide with glass fiber reinforced UL94-HB
- **Low Noise & Low Mote**
- **Temperature :** -30°C ~ +130°C
- **Coefficient of Friction :**
0.3~0.4 μ
- **Applications**

Facilities and equipments requiring a long travel distance as below; Gantry Robots, Robot Carriages, Automatic Welding Lines, Gantry Cranes, Gantry loader, etc.

● Calculation of the chain length

$$\left[L = \frac{Ls}{2} + Lp \right]$$

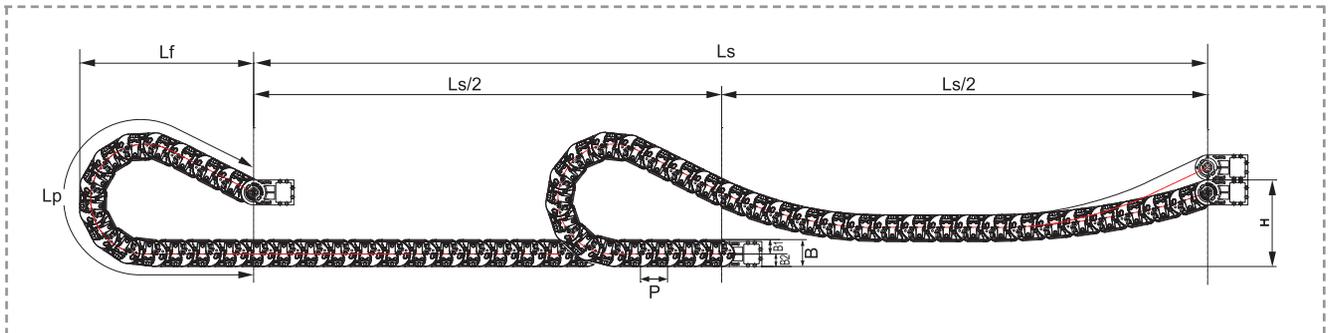
After using skid for a long time, it can be replaced without extra components.



Skid Type **ST 072S**

LAYOUT OF THE CHAIN

Ls: Stroke **Lp:** Loop Length **Lf:** Loop Projection



(Dimensions in mm)

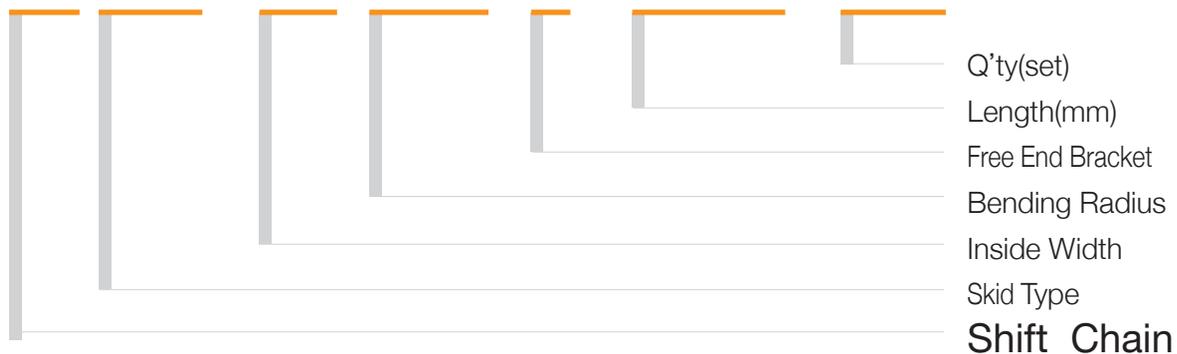
Bending radius R	100	120	145	200	250	300
Lp	806	917	1,063	1,400	1,840	2,280
Lf	380	420	470	580	752	924
H	160	160	160	160	160	160

ST 072S Type

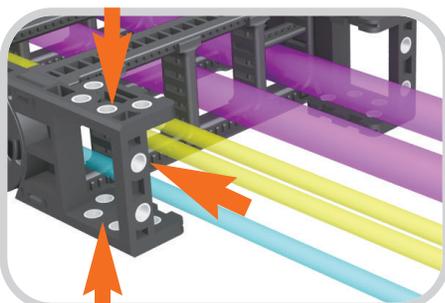
Pitch P: 72mm
Height B: 71.8mm
B1: 38.5mm
B2: 33.3mm

ORDERING

ST 072S . 175. R200 / F - 10000L : 10ST



BRACKET TYPE

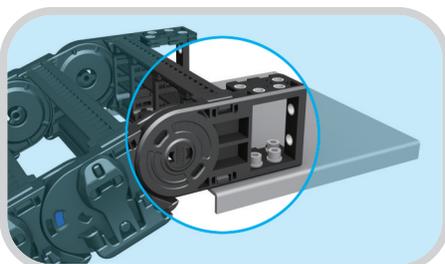


FEB (Free End Bracket)

FEB Fixes the cable chain to the machinery or moving application. CPS has improved mounting efficiency by unifying the existing Easy End Bracket and Normal End Bracket.

The End Bracket is designed to move up and down as the cable chain or application requires. To add strength, steel washers are inserted into the fixing holes of each Free End Bracket.

▶ BR should not be inserted in the joint of side band and Free End Bracket

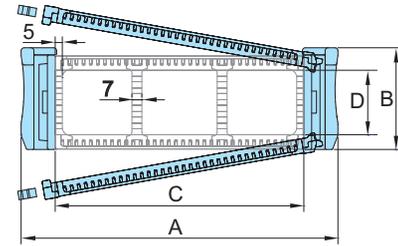
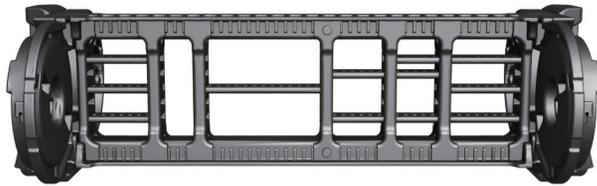


▶ Above products are patent registered item which can be protected by industrial



Skid Type ST 072S

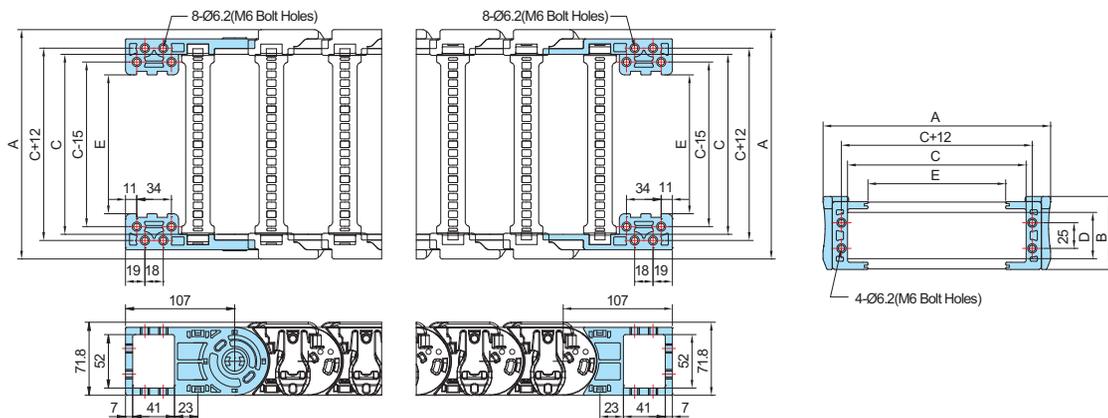
CHAIN CROSS SECTION



Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
ST 072S.050	105		50			2.48
ST 072S.075	130		75			2.57
ST 072S.100	155		100			2.67
ST 072S.125	180		125			2.81
ST 072S.150	205	71.8	150	45	100, 120, 145, 200, 250, 300	2.95
ST 072S.175	230		175			3.07
ST 072S.200	255		200			3.49
ST 072S.250	305		250			3.89
ST 072S.300	355		300			4.23

▲ Application of special frame. (C:140,165,190,240)

FREE END BRACKET



▲ Moving point

▲ Fixing point

▲ Front point

Chain Type	A	B	C	D	E	Hole Type
ST 072S.050	105		50		10	
ST 072S.075	130		75		35	
ST 072S.100	155		100		60	
ST 072S.125	180		125		85	
ST 072S.150	205	71.8	150	45	110	M6 Bolt Holes
ST 072S.175	230		175		135	
ST 072S.200	255		200		160	
ST 072S.250	305		250		210	
ST 072S.300	355		300		260	

▲ Application of special frame. (C:140,165,190,240)

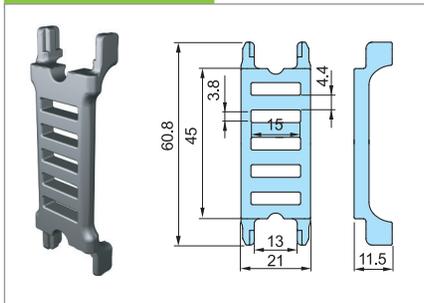


Skid Type **ST 072S**

DIVIDERS

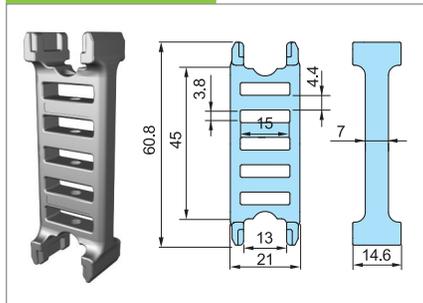
Dividers (Vertical) and Separators (Horizontal) divide the inner chamber of the cable chain to give each cable diameter its own center and keep the cables separated from each other. The use of a separator in some cases, can also reduce the width requirements as two or more levels can be made within the same chamber. To prevent twisting or damage to the cables, as a rule, there needs to be at least 10% space between the inserted cable and its enclosure.

ST 072S DV-S

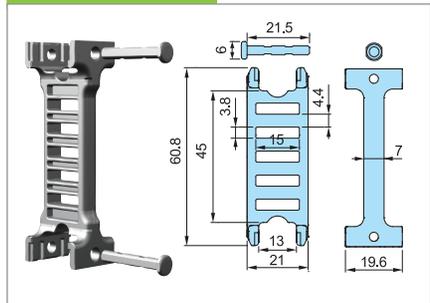


▶ Assemble divider every Two links.

ST 072S DV-M

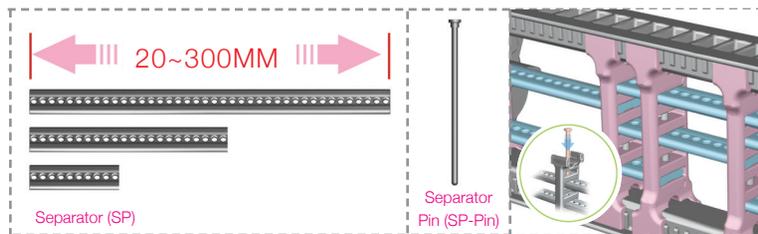


ST 072S DV-T



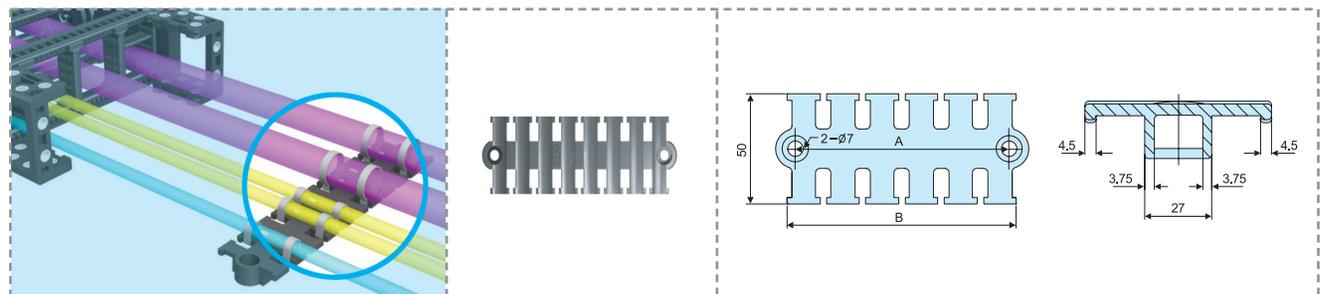
▶ DV-T : Frame 200~300

SEPARATORS (SP)



Separator is available in length from 20mm to 300mm and can be cut every 5mm for use. The combined use of divider and separator with the pin creates the most effective cable pattern and keep insertion space for cables safely, so it protects the inserted cables.

TIE WRAP



(Dimensions in mm)

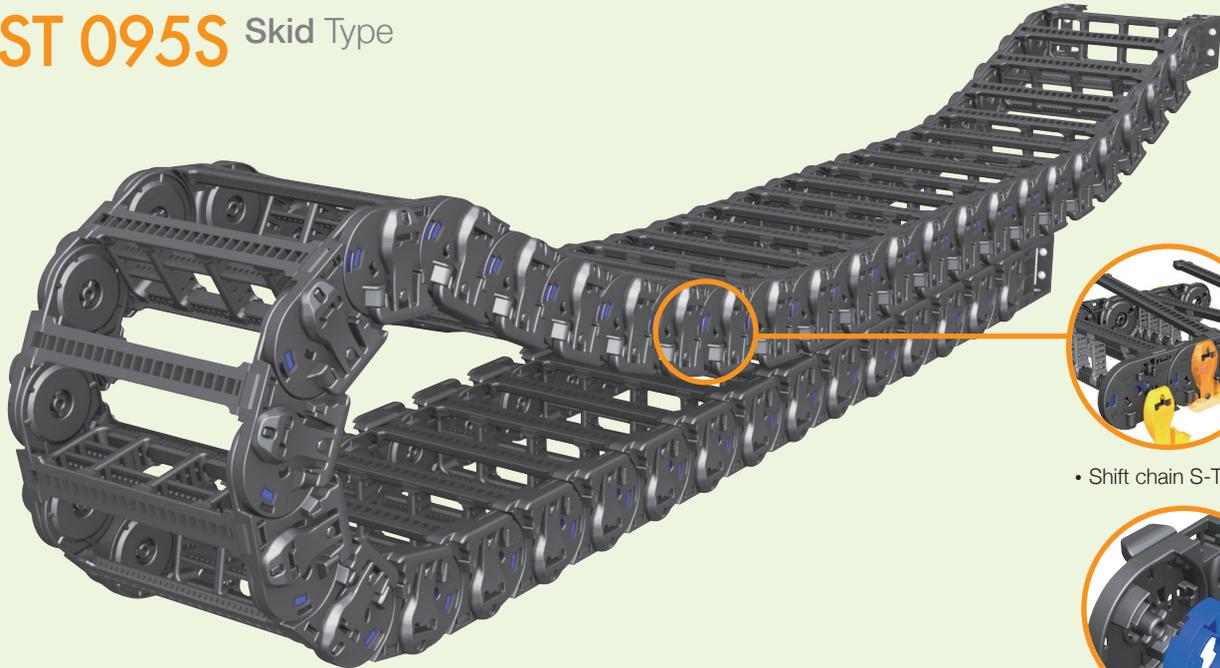
Tie Wrap	050	075	100	125	150
A	58	75	98	122	141
B	65	82	105	129	148

The Tie Wrap separated from the Shift Chain FEB, when installed properly, protects the inserted cables from becoming entangled and twisted during operation.



Min ●●●●●●●● Max

Shift chain[®] ST 095S Skid Type



• Shift chain S-Type •



• Bending Radius Unit •

MATERIAL

- **Chain material:**
CPS-amide with glass fiber reinforced UL94-HB
- **Low Noise & Low Mote**
- **Temperature :** -30°C ~ +130°C
- **Coefficient of Friction :**
0.3~0.4 μ
- **Applications**
Facilities and equipments requiring a long travel distance as below; Gantry Robots, Robot Carriages, Automatic Welding Lines, Gantry Cranes, Gantry loader, etc.
Gantry robots, Robot carriages, Automatic welding Gantry crane, Gantry loader 등

● Calculation of the chain length

$$\left[L = \frac{L_s}{2} + L_p \right]$$

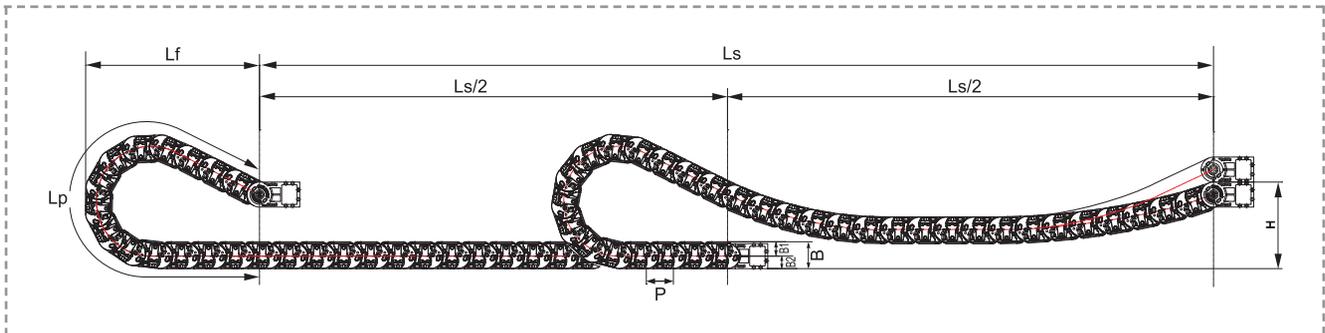
After using skid for a long time, it can be replaced without extra components.



Skid Type **ST 095S**

LAYOUT OF THE CHAIN

Ls: Stroke Lp: Loop Length Lf: Loop Projection



(Dimensions in mm)

Bending radius R	135	150	200	230	280	400
Lp	1,091	1,178	1,479	1,666	2,146	3,232
L f	504	534	634	694	889	1,319
H	200	200	200	200	200	200

ST 095S Type

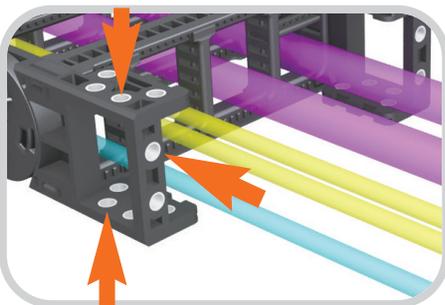
Pitch P: 95mm
Height B: 89mm
B1: 48mm
B2: 41mm

ORDERING

ST 095S . 200. R200 / F - 10000L : 10ST

Q'ty(set)	
Length(mm)	
Free End Bracket	
Bending Radius	
Inside Width	
Skid Type	
Shift Chain	

BRACKET TYPE

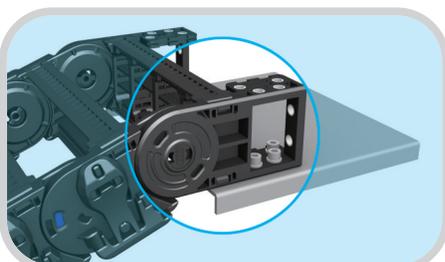


FEB (Free End Bracket)

FEB Fixes the cable chain to the machinery or moving application. CPS has improved mounting efficiency by unifying the existing Easy End Bracket and Normal End Bracket.

The End Bracket is designed to move up and down as the cable chain or application requires. To add strength, steel washers are inserted into the fixing holes of each Free End Bracket.

▶ BR should not be inserted in the joint of side band and Free End Bracket

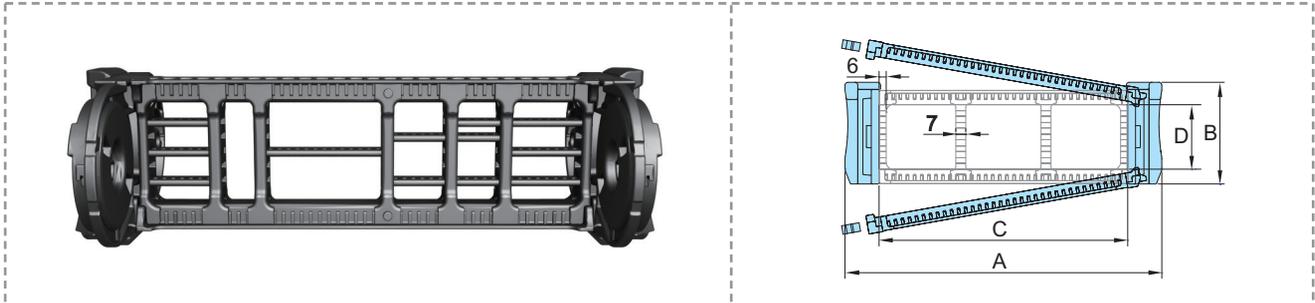


▶ Above products are patent registered item which can be protected by industrial property right.



Skid Type **ST 095S**

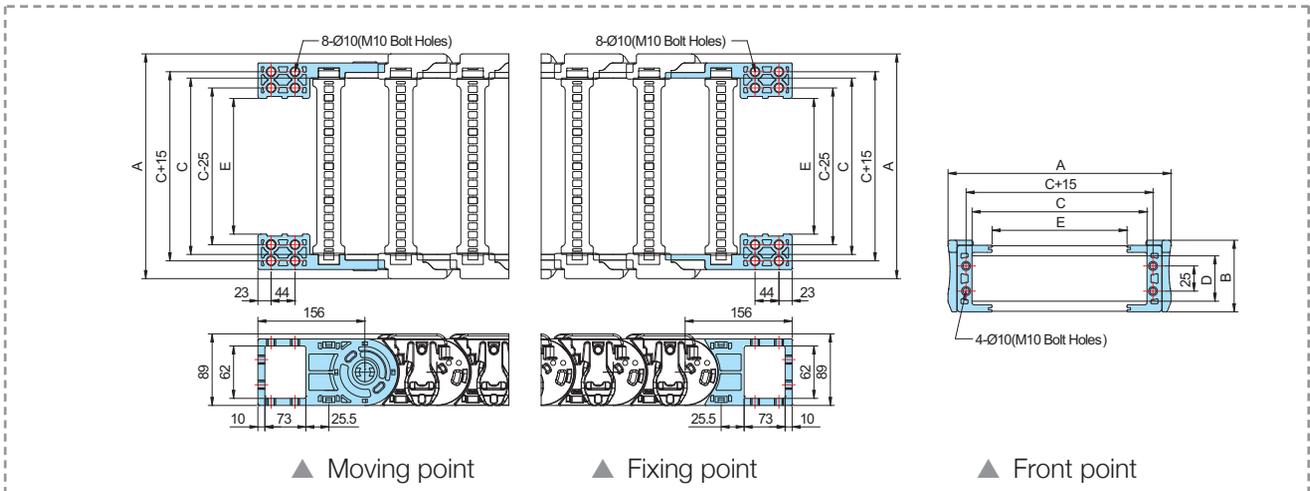
CHAIN CROSS SECTION



Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
ST 095S.075	137		75			3.44
ST 095S.100	162		100			3.50
ST 095S.125	187		125			3.68
ST 095S.150	212		150			3.79
ST 095S.175	237	89	175	56	135,150, 200,	3.92
ST 095S.200	262		200		230, 280, 400	4.10
ST 095S.250	312		250			4.36
ST 095S.300	362		300			4.63
ST 095S.350	412		350			4.98
ST 095S.400	462		400			5.38

▲ Application of special frame. (C:190,240)

FREE END BRACKET



Chain Type	A	B	C	D	E	Hole Type
ST 095S.075	137		75		24	M10 Bolt Holes
ST 095S.100	162		100		49	
ST 095S.125	187		125		74	
ST 095S.150	212		150		99	
ST 095S.175	237		175		124	
ST 095S.200	262	89	200	56	149	
ST 095S.250	312		250		199	
ST 095S.300	362		300		249	
ST 095S.350	412		350		299	
ST 095S.400	462		400		349	

▲ Application of special frame. (C:190,240)

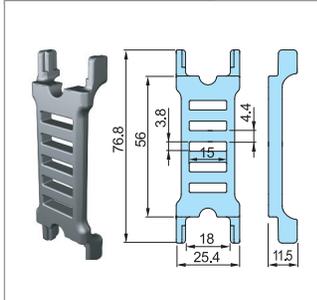


Skid Type **ST 095S**

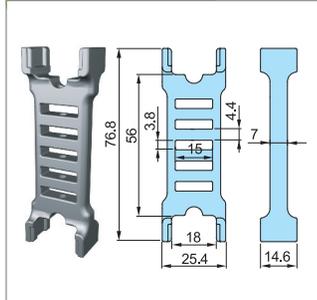
DIVIDERS

Dividers (Vertical) and Separators (Horizontal) divide the inner chamber of the cable chain to give each cable diameter its own center and keep the cables separated from each other. The use of a separator in some cases, can also reduce the width requirements as two or more levels can be made within the same chamber. To prevent twisting or damage to the cables, as a rule, there needs to be at least 10% space between the inserted cable and its enclosure.

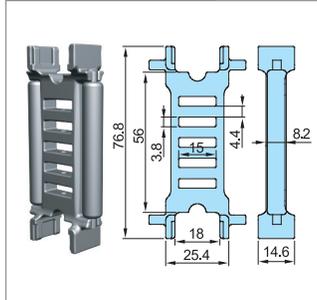
ST 095S DV-S



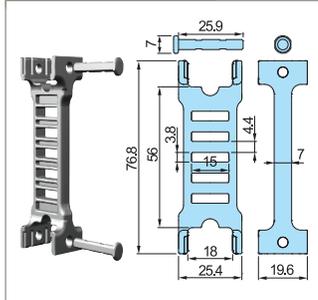
ST 095S DV-M



ST 095S DV-R



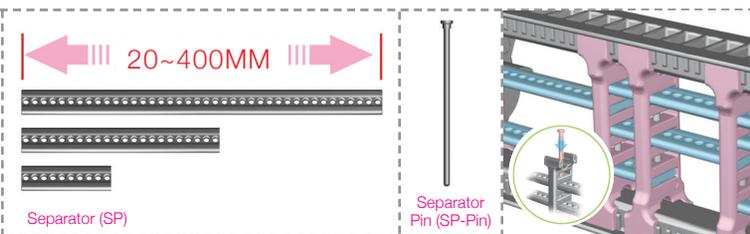
ST 095S DV-T



▶ Assemble divider every Two links.

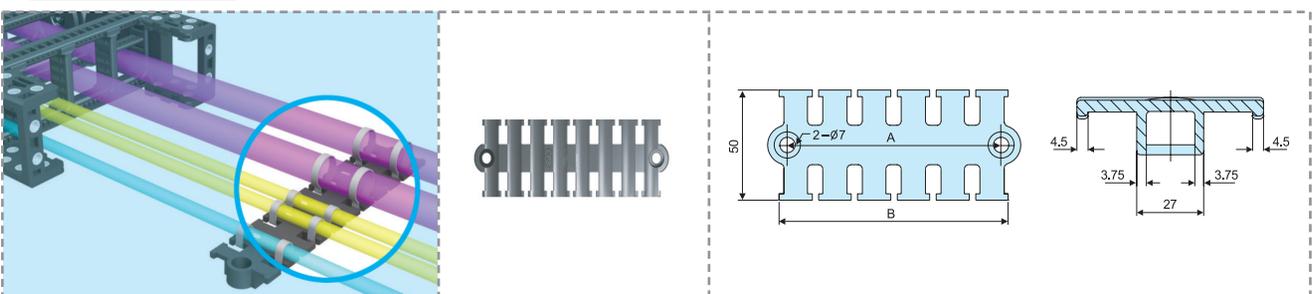
▶ DV-T : Frame 250~400

SEPARATORS (SP)



Separator is available in length from 20mm to 400mm and can be cut every 5mm for use. The combined use of divider and separator with the pin creates the most effective cable pattern and keep insertion space for cables safely, so it protects the inserted cables.

TIE WRAP



(Dimensions in mm)

Tie Wrap	050	075	100	125	150
A	58	75	98	122	141
B	65	82	105	129	148

The tie wrap separated from the Shift Chain FEB, when installed properly, protects the inserted cables from becoming entangled and twisted during operation.



Skid Type **ST 095S**

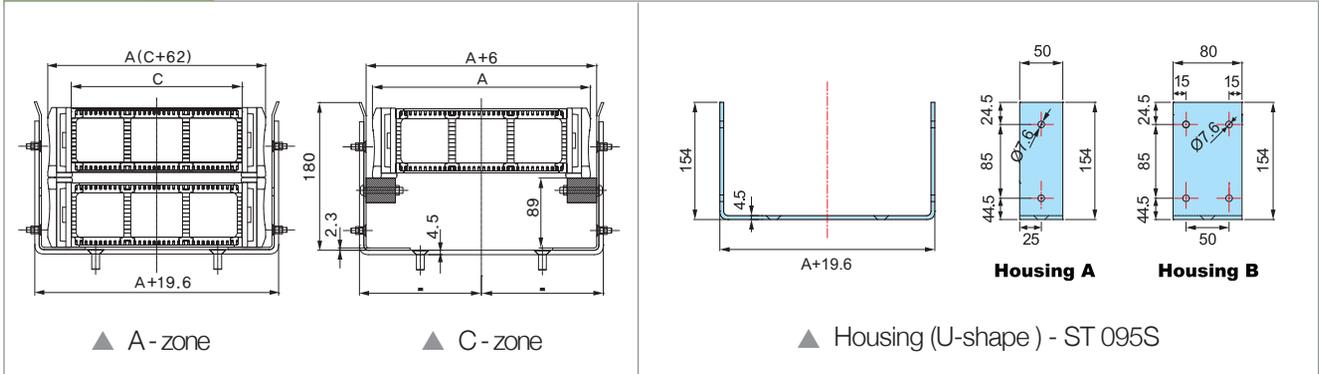
GUIDE CHANNEL



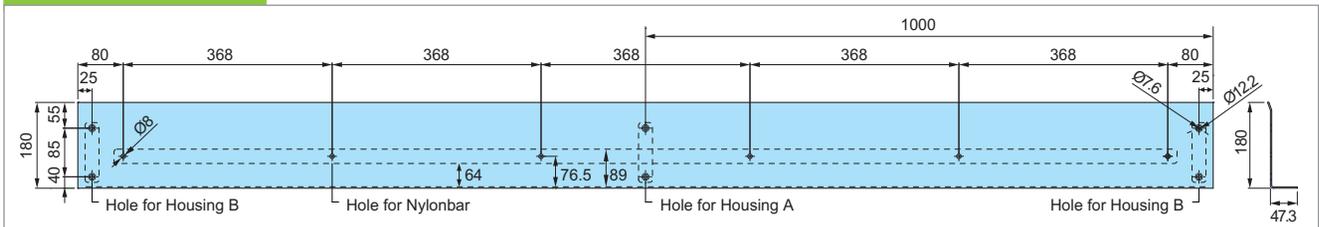
For long stroke applications the guide channel is applied to ensure that the Shift Chain Sliding Chain stays on track and to ensure safety during operation. With the application of a rubber pad on the channel floor, noise is reduced to a minimum. Guide Channels are made of Steel + Zn and can be customized with SUS material .

► Thickness can be changed by the product standards of material.

ST 095S Type

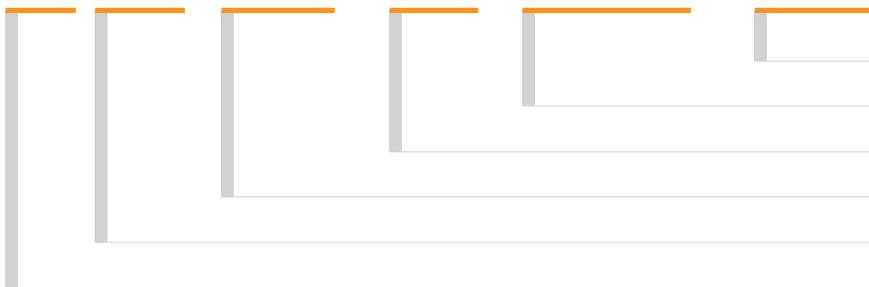


ST 095S Side Panel



ORDERING

ST-GCS 095S . 175 / A, B, C : 200M

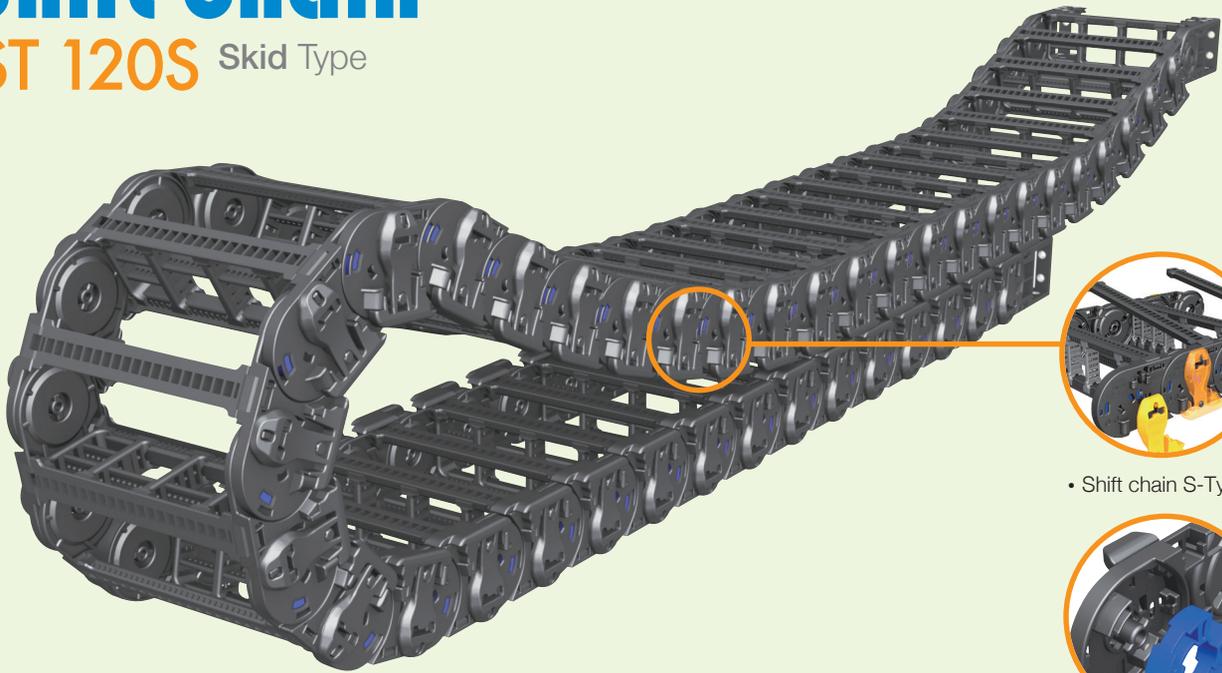


Length(mm)
 Panel A, B, C-Zone
 Inside Width
 Chain Type
 Steel Guide Channel
 Shift Chain



Min ●●●●●●● Max

Shift chain® ST 120S Skid Type



• Shift chain S-Type •



• Bending Radius Unit •

CPS CABLE CHAIN

SHIFT CHAIN

SABIN CHAIN

REVOLVING CHAIN

HELIX CHAIN

ROBO-KIT

CPSLEX

CPSHX

MATERIAL

- **Chain material:**
CPS-amide with glass fiber reinforced UL94-HB
- **Low Noise & Low Mote**
- **Temperature :** -30°C ~ +130°C
- **Coefficient of Friction :**
0.3~0.4 μ

Applications

Facilities and equipments requiring a long travel distance as below; Gantry Robots, Robot Carriages, Automatic Welding Lines, Gantry Cranes, Gantry loader, etc.

Gantry robots, Robot carriages, Automatic welding Gantry crane, Gantry loader..등

Calculation of the chain length

$$\left[L = \frac{L_s}{2} + L_p \right]$$

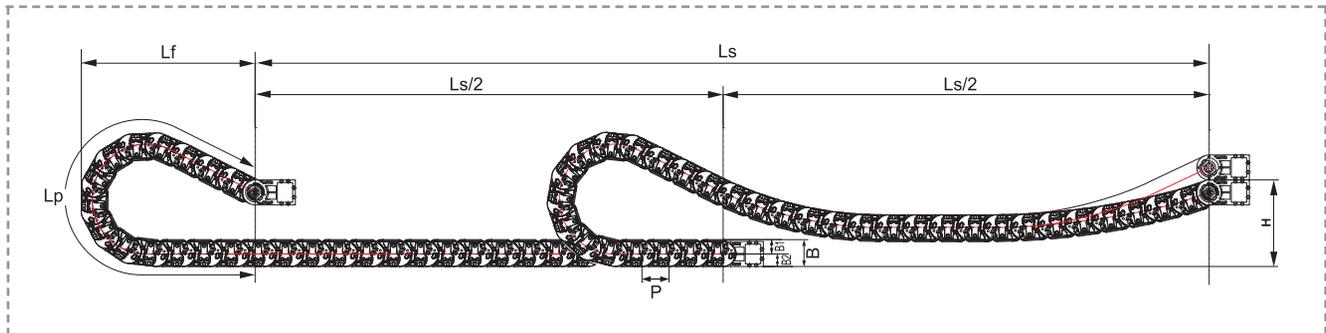
After using skid for a long time, it can be replaced without extra components.



Skid Type **ST 120S**

LAYOUT OF THE CHAIN

Ls: Stroke **Lp:** Loop Length **Lf:** Loop Projection



(Dimensions in mm)

Bending radius R	180	200	250	300	350	400	500
Lp	1,441	1,559	1,864	2,178	2,701	3,225	4,062
Lf	654	694	794	894	1,114	1,334	1,654
H	250	250	250	250	250	250	250

ST 120S Type

Pitch P: 120mm
Height B: 115mm
B1: 61mm
B2: 54mm

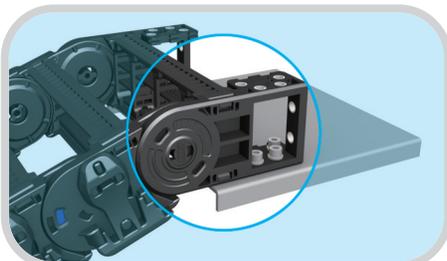
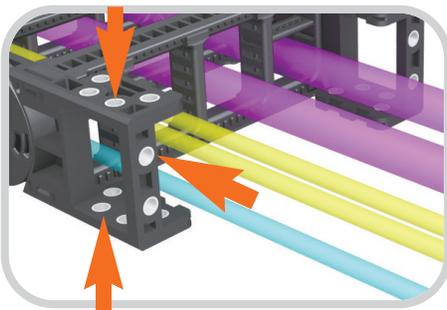
ORDERING

ST 120S . 300. R200 / F - 10000L : 10ST

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Q'ty(set)
 Length(mm)
 Free End Bracket
 Bending Radius
 Inside Width
 Skid Type
Shift Chain

BRACKET TYPE



FEB (Free End Bracket)

FEB Fixes the cable chain to the machinery or moving application. CPS has improved mounting efficiency by unifying the existing Easy End Bracket and Normal End Bracket.

The End Bracket is designed to move up and down as the cable chain or application requires. To add strength, steel washers are inserted into the fixing holes of each Free End Bracket.

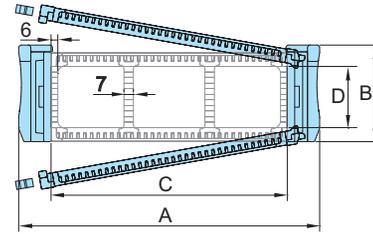
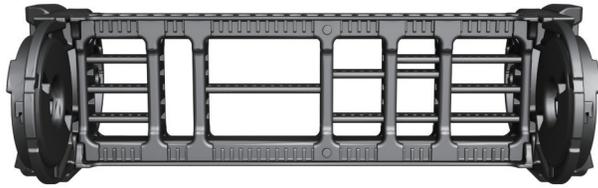
▶ BR should not be inserted in the joint of side band and Free End Bracket

▶ Above products are patent registered item which can be protected by industrial property right.



Skid Type ST 120S

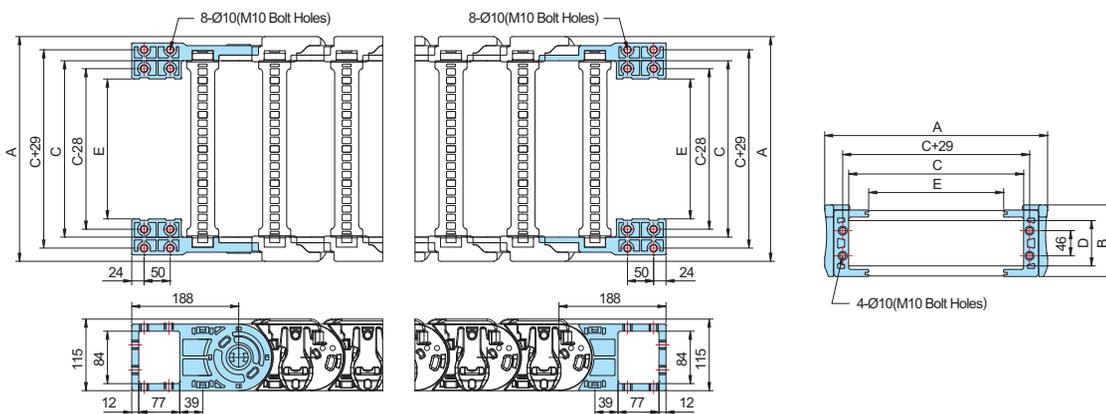
CHAIN CROSS SECTION



Chain Type	A	B	C	D	Bending Radius(R)	Weight in kg/m
ST 120S.075	143	115	75	78	180, 200, 250, 300, 350, 400, 500	-
ST 120S.100	168					
ST 120S.125	193					
ST 120S.150	218					
ST 120S.175	243					
ST 120S.200	268					
ST 120S.250	318					
ST 120S.300	368					
ST 120S.350	418					
ST 120S.400	468					
ST 120S.450	518					
ST 120S.500	568					
ST 120S.550	618					
ST 120S.600	668					

▲ Application of special frame. (C:115,240,290)

FREE END BRACKET



▲ Moving point

▲ Fixing point

▲ Front point

Chain Type	A	B	C	D	E	Hole Type
ST 120S.075	143	115	75	78	15	M10 Bolt Holes
ST 120S.100	168		40			
ST 120S.125	193		65			
ST 120S.150	218		90			
ST 120S.175	243		115			
ST 120S.200	268		140			
ST 120S.250	318		190			
ST 120S.300	368		240			
ST 120S.350	418		290			
ST 120S.400	468		340			
ST 120S.450	518		390			
ST 120S.500	568		440			
ST 120S.550	618		490			
ST 120S.600	668		540			

▲ Application of special frame. (C:115,240,290)

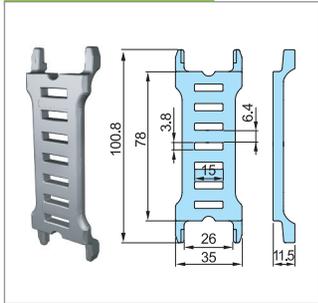


Skid Type **ST 120S**

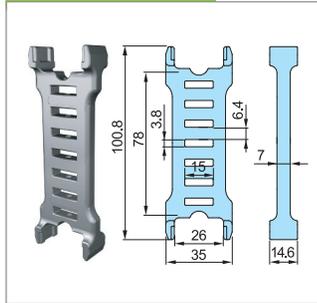
DIVIDERS

Dividers (Vertical) and Separators (Horizontal) divide the inner chamber of the cable chain to give each cable diameter its own center and keep the cables separated from each other. The use of a separator in some cases, can also reduce the width requirements as two or more levels can be made within the same chamber. To prevent twisting or damage to the cables, as a rule, there needs to be at least 10% space between the inserted cable and its enclosure.

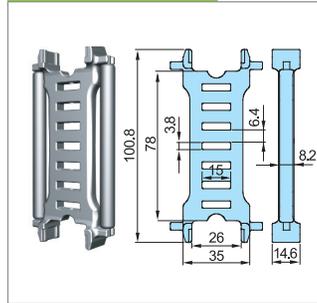
ST 120S DV-S



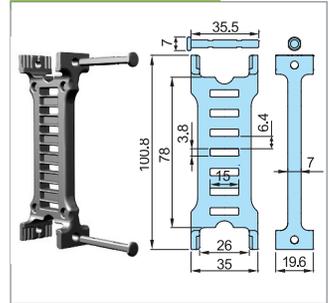
ST 120S DV-M



ST 120S DV-R



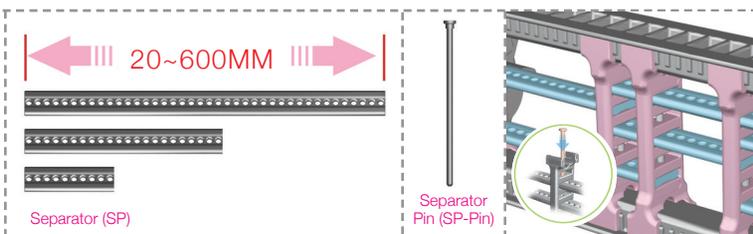
ST 120S DV-T



▶ Assemble divider every Two links.

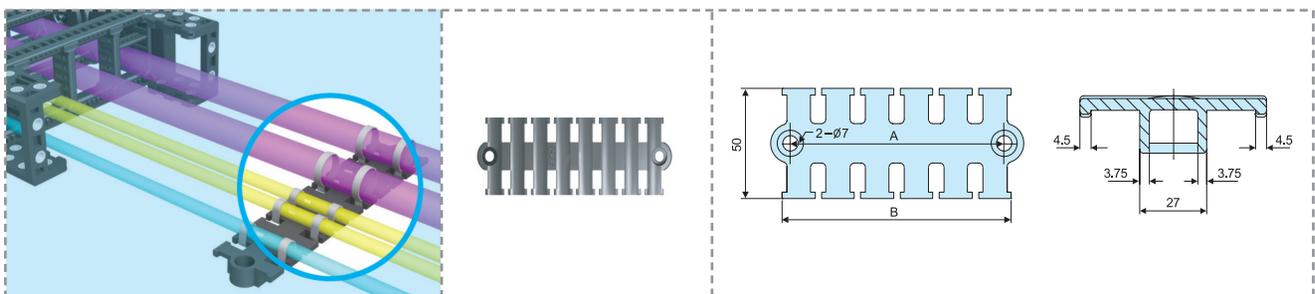
▶ DV-T : Frame 300~600

SEPARATORS (SP)



Separator is available in length from 20mm to 600mm and can be cut every 5mm for use. The combined use of divider and separator with the pin creates the most effective cable pattern and keep insertion space for cables safely, so it protects the inserted cables.

TIE WRAP



(Dimensions in mm)

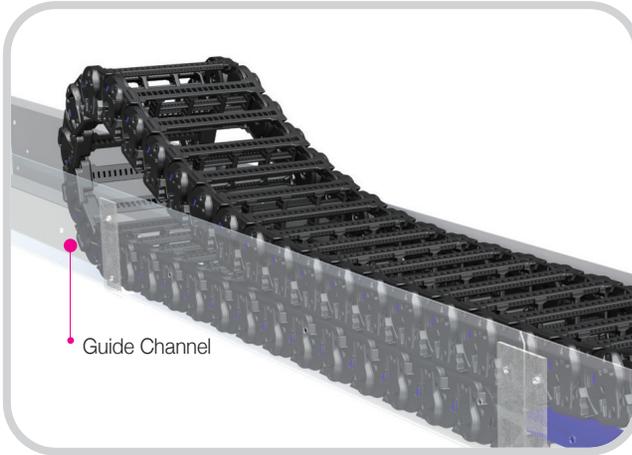
Tie Wrap	050	075	100	125	150
A	58	75	98	122	141
B	65	82	105	129	148

The Tie Wrap separated from the Shift Chain bracket, when installed properly, protects the inserted cables from becoming entangled and twisted during operation.



Skid Type **ST 120S**

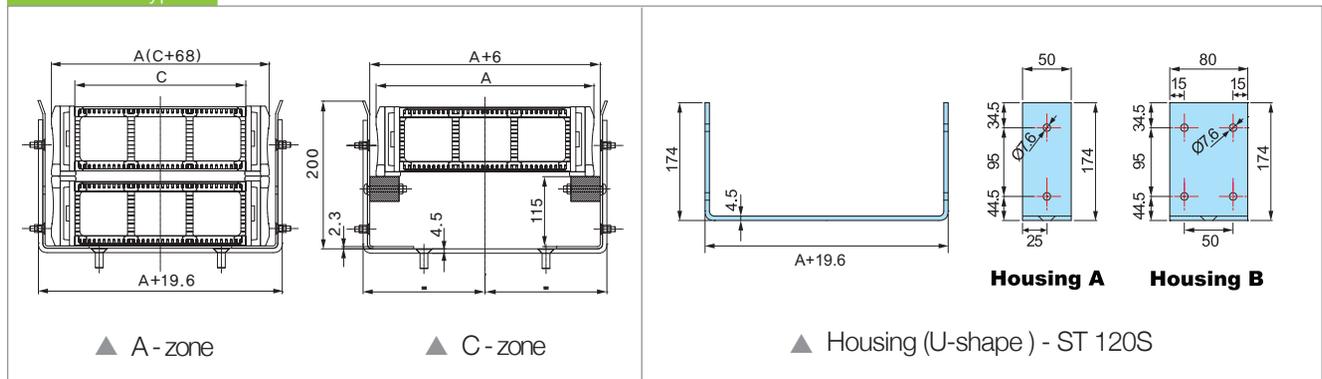
GUIDE CHANNEL



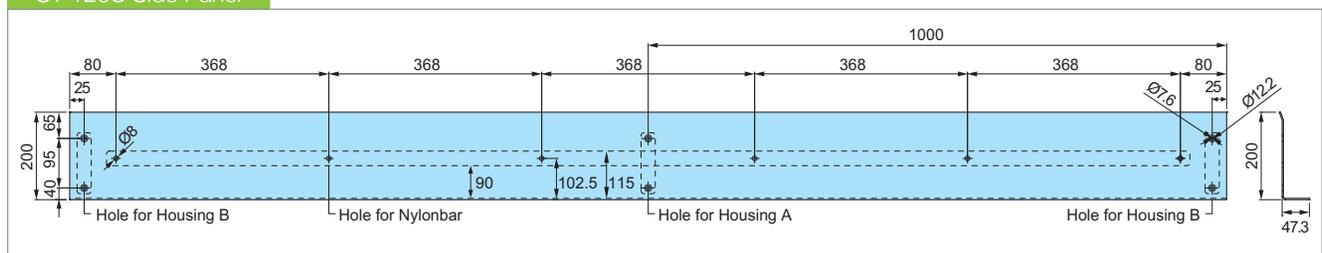
For long stroke applications the guide channel is applied to ensure that the Shift Chain Sliding Chain stays on track and to ensure safety during operation. With the application of a rubber pad on the channel floor, noise is reduced to a minimum. Guide Channels are made of Steel + Zn and can be customized with SUS material .

► Thickness can be changed by the product standards of material.

ST 120S Type



ST 120S Side Panel



ORDERING

ST-GCS 120S . 175 / A, B, C : 200M



Length(mm)
 Panel A, B, C-Zone
 Inside Width
 Chain Type
 Steel Guide Channel
 Shift Chain



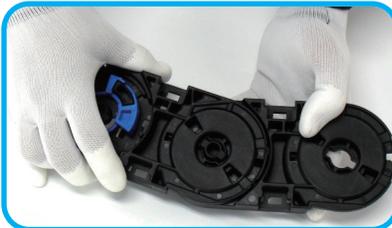
ASSEMBLY PROCEDURE / SKID Type

Assembly procedure of Shift chain S-type is as follows. The assembling process of shift Chain S-type is like below and you must use rubber hammer with careful combination of Divider and Separator. (Disassembly process for repair and replacement are in reverse order)



1.

Insert BR Unit into each Side Band.
(Side Band is divided into right and left side according to the direction.)



2.

Continue to insert BR Unit into Side Band as you want to make it. Assemble Side Band which is inserted BR Unit as above.



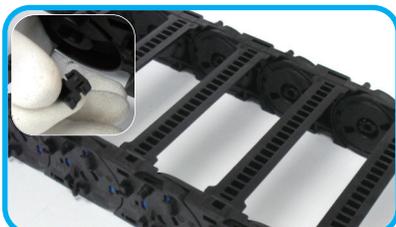
3.

Continue to connect each Side Band as long as you want to make it. Connect the Side Band as many as you need.



4.

Connect right and left link with specified frame.
(Put Hinge Type frame in the hole of Side Band)



5.

Insert frame pin onto connected each Frame and side of Side Band to be made tightly.
(to divide inner room, insert divider which is connected with separator.)



6.

Assemble opposite frame as same procedure.



7.

Insert Skid to the protruding side of Side Band.



RoHS

CE

AMBA

A

IAF

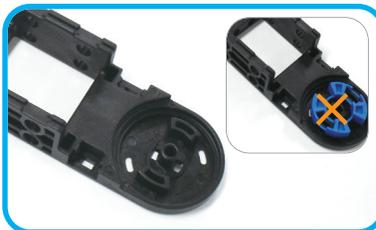
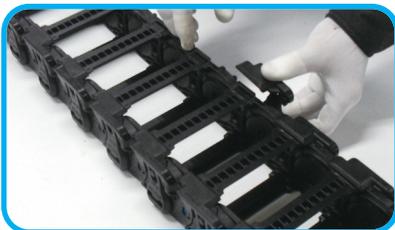
ASSEMBLY PROCEDURE / SKID Type

**8.**

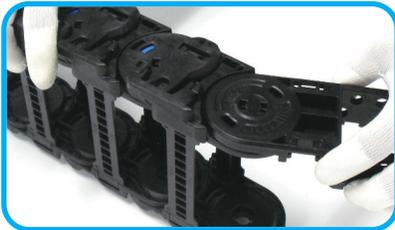
When inserting a Skid, push tightly to the home of Side Band until you hear "click"(Skid is divided each direction like right and left.)

**9.**

Assembly the Skid on the entire connected Side Band as same way.

**10.**

Assembly the Skid on the entire connected opposite side as well. Do not insert a BR Unit to M.FEB.(M.FEB will be making a turn to up and down)

**11.**

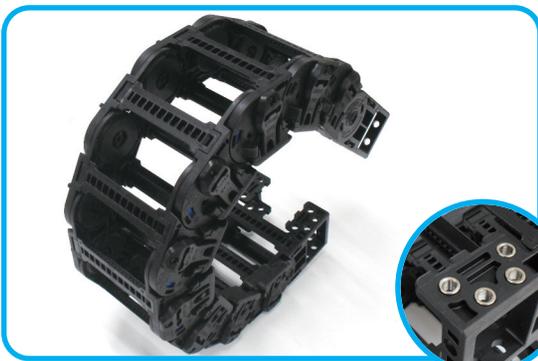
Assembly M.FEB to be corrective each direction such as right and left.

**12.**

Assembly F.FEB to be suitable each direction such as right and left.
(Do not insert a BR Unit for the Side Band which is connected with F.FEB)

**13.**

Assembly a specified frame in M.FEB and F.FEB.(Hinge is inserted into RH direction of FEB)
Insert Frame pin into connected frame and side of FEB.

**14.**

Insert steel washers into FEB according to fixing direction.